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February 1977

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COVER: Members of *Operation Deep Freeze* climb a snowbank in Antarctica. LCDR D.B. Moyer, MC, USNR reports on medical support for this operation, beginning on page 24.

This issue introduces a new section, "Independent Duty," which will feature topics of special interest to independent duty corpsmen. In the first offering, CDR L.J. Melton III (MC) discusses the influence of high-risk groups on the incidence of gonorrhea, beginning on page 26.

From the Surgeon General

Senior Enlisted Personnel: Let's Make the Most of Them

Austere funding demands that we make full use of all our resources. This is especially true of our personnel resources, which account for a large part of the cost of the services we provide.

One area which should be reviewed is use of senior enlisted personnel—E-7's, E-8's, and E-9's. This group is, for the most part, composed of men and women who have not only a high degree of technical skill acquired through formal training, but also many years of experience. They are invaluable leaders, counselors, and advisers of our junior personnel.

Unfortunately, many senior enlisted members are not being assigned where they can perform at their maximum potential. The results of such "misutilization" are twofold: first, the command, the Medical Department, and the Navy suffer financially when someone is paid to do less than he or she can; second, many senior petty officers leave the Navy as soon as they have the minimum time they need to transfer to the Fleet Reserve. These men and women often cite "lack of job satisfaction" or "no challenge in the assignment" as big factors in their decision to leave.

There are many billets to which assignment of senior enlisted personnel would benefit both the command and the individual; such billets include:

- staff personnel officer;
- security officer;



VADM Arentzen

- assistant patient affairs officer;
- administrative assistant to the director of administrative services, chiefs of service, department heads, and type commanders' staffs;
- special services officer;
- CHAMPUS adviser;
- career counselor.

While these are not the only billets to which senior enlisted personnel could be detailed, they represent challenging positions which require the individuals assigned to accept greater responsibility and demonstrate their ability.

The size and mission of the command will, to a large degree, dictate

the seniority or pay grade of the man or woman who fills the billet. But every command has certain billets ideally suited to the skills and experience of senior enlisted personnel. Manpower authorizations should be reviewed and changes requested as required to implement a program that will use all the ability of these members; when necessary, provision should be made to train individuals to the needs of the job. If we give maximum support to this concept, we can demand maximum performance.

In the skills and experience of these, our junior management personnel, we have the potential to maintain and further improve the quality of our health care delivery system. We must provide our senior enlisted Medical Department members with broad experience which, combined with their mature leadership capability, will enable them to make greater contributions in our hospitals and operational billets.

A handwritten signature in dark ink, appearing to read "W.P. Arentzen". The signature is fluid and cursive, with a large, stylized "A" and "Z".

W.P. Arentzen
Vice Admiral, Medical Corps
United States Navy

Department Rounds

Awards, Advances Highlight Professional Meetings

Professional meetings—whether annual gatherings, conferences, seminars, short courses, or symposia—help keep Medical Department members abreast of new developments in their field. SECNAV Instruction 4651.15C of 11 December 1976 emphasizes that attendance at such meetings is an accepted part of professional career training and is the Navy's preferred method for providing refresher training and education.

Three professional meetings important to Medical Department members convened during the closing months of 1976. At the 83rd annual meeting of the Association of Military Surgeons of the United States, three Navy medical officers and a Medical Service Corps officer were honored for their contributions to military medicine. Military perinatal care and expanded roles for pediatric nurse practitioners were among the topics tackled by the Section on Military Pediatrics during the annual meeting of the American Academy of Pediatrics. And Navy efforts to provide safe working places on land and at sea were discussed at the 19th Annual Occupational Health Workshop. *US Navy Medicine* thanks all who contributed to the following reports:

AMSUS. During the 83rd annual meeting of the Association of Military Surgeons of the United States (AMSUS), held in San Antonio 31 Oct-4 Nov 1976, CAPT George M. Lawton (MC), deputy director of the Occupational and Preventive Medicine Division at the Bureau of Medicine and Surgery, received the Gorgas Medal for distinguished work in preventive medicine. Dr. Lawton was honored for his pioneering efforts in developing and managing the Navywide occupational



health program. His exceptional accomplishments include developing occupational health training, research, and development programs; and major contributions to the professional literature.

CDR Lee J. Melton III (MC), head of the Epidemiology Section, BUMED, received the Donald H. Gaylor Award for outstanding contributions in the field of tuberculosis. CDR Melton revitalized the Navy's tuberculosis control program, securing contacts with other government agencies, consulting experts in the field, and writing an unusually clear implementing directive (BUMED Instruction 6224.1D of 8 Aug 1975) to establish the Navy program.

LCDR Robert Shaw, Jr. (MC) of Navy Environmental and Preventive Medicine Unit #6, Pearl Harbor, Hawaii, was awarded the Sir Henry S. Wellcome Medal and Prize for "Preventive Medicine in the Vietnamese Refugee Camps on Guam," judged the best essay on a subject relating to military medicine.

CDR Barbara Munroe (MSC) won the Major Louis Livingston Seaman



Honored by AMSUS: CAPT George M. Lawton (MC), above, receives Gorgas Medal; CDR Lee J. Melton III (MC), left, wins Gaylor Award.

Prize, awarded for a notable article published in *Military Medicine* during the previous year. Her winning article, "Rehabilitation of the Upper Extremity Traumatic Amputee," co-authored by LCDR Richard J. Nasca (MSC), appeared in the June 1975 issue. Formerly chief of the Occupational Therapy Branch at Naval Regional Medical Center Philadelphia, CDR Munroe is now chief of that facility's Security Service.

This year's meeting, featuring the theme "Spirit of Federal Medical Support for 1976—A Bicentennial Report," was presided over by AMSUS president, Air Force Surgeon General LT GEN George E. Schafer. Malcolm C. Todd, M.D., immediate past president of the American Medical Association, delivered the keynote address.

MILITARY PEDIATRICS. The Section on Military Pediatrics presented a scientific program of nine papers during the annual meeting of the American Academy of Pediatrics, held 17-22 Oct 1976 in Chicago. CDR William McCurley (MC), chief of the Pediatrics Service at NRM

Philadelphia, described how medical, psychological, and educational specialists can use a team approach to help the learning-disabled child. CDR McCurley described a program, developed at the National Naval Medical Center, in which the pediatrician performs medical and neurological evaluations of the child, counsels the parents, and acts as the child's advocate in the schools; the pediatrician also works with other professionals—psychologists, social workers, education diagnosticians, and community guidance counselors—to evaluate the child and develop a therapeutic program. Pediatric residents and the children's parents responded positively to this clinic experience.

Another Navy pediatrician, LCDR John Wimmer (MC), called for uniform standards of perinatal care in all military hospitals, and for inter-service cooperation to improve perinatal health care delivery. After surveying the perinatal capabilities of military hospitals, LCDR Wimmer found that 14 hospitals had enough perinatal services to be designated as regional referral centers, able to provide complete care for high-risk mothers and infants; however, many of these 14 hospitals had inadequate anesthesiology and neonatal intensive nursing support. Fifty percent of smaller military hospitals, which should be able to provide routine perinatal care and screening for high-risk pregnancies and newborns, had significant deficiencies in laboratory and nursing services. LCDR Wimmer proposed tri-service cooperation and pooling of regional resources to improve military perinatal care.

A study of the military aeromedical evacuation system for transporting high-risk and ill infants to hospitals was reported by MAJ William J. Oetgen, MC, USA, and LT COL Richard D. Landes, MC, USA, of the Walter Reed Army Medical Center, Washington, D.C. Statistics derived from a review of aeromedical evacuation admissions to that facility's intensive care nursery over 50 months revealed that aeromedi-

cally evacuated infants had a 19% mortality rate, compared to a 10% mortality rate for all intensive care nursery patients. Differences in diagnosis did not account for this greater mortality, but hazards of the aircraft environment, such as hypothermia (associated with a 43% mortality rate), are suspected, MAJ Oetgen and LT COL Landes noted. A tri-service study is planned of the aeromedical evacuation system.

Psychosocial aspects of the unwed teenage mother were discussed by MAJ Arthur Elster, MC, USA, of Madigan Army Medical Center, Tacoma, Wash., who suggested that unwed pregnant adolescents can be grouped into three categories, based on their personality profiles, their response to the pregnancy, and the pregnancy's effect on their psychosocial development. A well adjusted teenager who responds positively to her pregnancy will need only routine medical care; but 20% of unwed teenage mothers have significant personality deficiencies, respond negatively to their pregnancy, and require psychiatric care. A third, "mixed" group—40% of unwed adolescent mothers—have mildly disturbed personalities but good potential for emotional growth. MAJ Elster said that unwed pregnant adolescents do well in direct proportion to the amount of professional attention, support at home, and instruction in raising children they receive.

A primary care clinic for adolescents at Fitzsimons Army Medical Center, Denver, was described by MAJ Russell V. McDowell, USAF, MC, and LT COL Joe M. Sanders, Jr., MC, USA. This clinic has an "open door" policy: adolescents aged 12 to 19 years are permitted to seek primary care without parental permission or medical referral. The speakers stressed that, soon after secondary sexual development begins, adolescents should have a routine physical examination, to include counseling on common adolescent problems.

LT COL James H. Nelson, MC, USA, reported on a pediatric

screening program run by Red Cross volunteers at Madigan Army Medical Center. The volunteers are selected and trained by the pediatric staff and are allowed to interview parents to obtain medical, social, and genetic histories; they also complete growth records, perform visual, auditory and blood pressure exams, check for scoliosis, organize medical records, check patients' immunization status, and counsel parents. Using information obtained by these volunteers, a pediatrician can completely evaluate a child during a 15-minute examination.



CDR B. Munroe (MSC)
Writes prize-winning article

MAJ Jacolynn I. Murphy, USAF, NC, of USAF Medical Center, Scott Air Force Base, Ill., identified several jobs that could be assigned to pediatric nurse practitioners: screening and managing minor, acute, and chronic illness; taking histories and performing physical assessments in specialty clinics; caring for well babies; performing screening procedures such as audiometric evaluation; and teaching parents how to care for children. CAPT Christina Addison, ANC, USA, of William Beaumont Army Medical Center, El Paso, Tex., de-

scribed how she coordinated a hospitalization follow-up clinic run by pediatric nurse practitioners; this clinic improved continuity of care, instruction of parents, and patient-staff relationships.

A pediatric nurse clinician can provide comprehensive care in the newborn nursery, said MAJ Marian Walls, ANC, USA, and CAPT Connie Shaw, ANC, USA, of Fitzsimons Army Medical Center. The nursery pediatric nurse practitioner can perform all physical examinations, direct nursery care of infants, complete laboratory evaluations for common problems such as hyperbilirubinemia, and counsel mothers.

The Military Pediatrics Section presented its second annual Outstanding Service Award to retired Navy pediatrician CAPT Andrew Margileth for his contributions to military pediatrics and his concern for the health and welfare of all children. A former chairman of pediatrics at the National Naval Medical Center, Dr. Margileth is now professor and assistant chairman of pediatrics at George Washington University School of Medicine, Washington, D.C. Two Navy pediatricians—CAPT Vernon Goller (MC) and CAPT Robert Biehl (MC)—were elected to the Section's eight-member executive committee.

—CDR Leslie C. Ellwood (MC)

OCCUPATIONAL HEALTH. More than 250 people attended the 19th Annual Occupational Health Workshop sponsored by the Navy Environmental Health Center and held 27 Sept-1 Oct 1976 in Charleston, S.C. The weekend before the workshop, some 110 people attended refresher courses in federal workers' compensation, occupational lung disease and pulmonary function testing, and industrial ventilation.

In his opening address, Mr. George Marienthal, deputy assistant secretary of defense for environment and safety, affirmed that "OSHA is here to stay," citing grim statistics to illustrate the need for

Department of Defense compliance with the Occupational Safety and Health Act of 1970. The DOD record for 1975 was 1,500 deaths and 2,500 disabling injuries attributed to occupational hazards. The cost: \$4.1 billion. Mr. Marienthal reported that DOD has published two directives (DOD Instructions 1000.11 and 1000.18) on occupational safety and is giving high priority to completing the management information system.

RADM J.D. Chase, assistant deputy chief of naval operations for logistics, said that the Navy's safety program often came from historical

sponse to the DOD-directed program of compliance with OSHA. Admiral Chase listed several goals:

- To institute a Navy occupational safety and health program which would not disturb operational safety programs already in effect.

- To distinguish between programs for military and civilian employees of the Department of the Navy, and programs to protect civilians working for the Navy under contract.

- To inspect all Navy workplaces at least annually.

- To train inspectors to identify occupational hazards and prescribe solutions.



Occupational health panel: (from left) J.S. Felton, M.D.; Mr. J. Schultz; Mr. P. Brodeur; Mr. R.C. Wands, director, Advisory Center on Toxicology, NAS/NRC.

concerns "written in blood." Noting the "perils of the sea" and the even greater perils that surround a warship, Admiral Chase said, "We have fires, some of them major, and we lose lives and incur injuries. We have collisions. We have explosions. We have accidents associated with moving machinery and equipment Every year we lose people by electrocution from improperly grounded or improperly handled equipment. Every year we lose people by asphyxiation from entering nonventilated spaces without some form of breathing apparatus."

Admiral Chase praised the Naval Safety Center in Norfolk, Va., for the exacting safety precautions developed there to counter these hazards and other dangers associated with nuclear weapons and nuclear propulsion.

Response. Reviewing Navy re-

- To improve health hazard data collecting methods.

- To educate the fleet about occupational health hazards.

- To work with unions representing civilian employees of the Navy.

Admiral Chase said that eliminating occupational health hazards is as important to the Navy as preventing accidents. More research is needed to understand many occupational health hazards, and programs must be designed to educate Navy people about these hazards. While calling for industrial hygienists at each region to assist in annual inspections of the workplace, Admiral Chase cautioned that money and billets are hard to get. "If you think it's going to be easy, you are wrong," he told the group.

RADM R.C. Laning (MC), assistant chief for operational medical support at the Bureau of Medicine and Surgery, said the Medical De-

partment has the organization and know-how to implement an effective occupational health program in the Navy, and reported that more resources may result from DOD and OPNAV action. He stressed the need to use to the fullest the few available resources. "We know that occupational health programs are good for the Navy and the Navy's people," Admiral Laning said. "No weapons system, no transportation system, no logistics system, no any system is complete without people to man them. And that's our job: to make sure those people are healthy and alert at their duty stations. To take every precaution to ensure that their working or living environment doesn't endanger them."

Conference participants spent three days examining those aspects of the job and environment that represent the major hazard to health in the Navy. Problems considered critical included chemical hazards, noise stress, ventilation, skin diseases, laboratory analysis, lung diseases, heat stress, pesticides, respirators, and radiation.

Discussing medical support to the fleet, RADM K.H. Geib (MC), fleet surgeon and assistant chief of staff for medicine, Commander in Chief, Atlantic Fleet, said the "health and welfare of personnel is paramount Sophisticated weapons systems are totally dependent on personnel." Admiral Geib suggested that hearing protection, heat stress, and sewage control should be given priority when services are provided to the fleet.

The closing session was addressed by Mr. Paul Brodeur of the *New Yorker*, who delivered a blistering attack against the "industrial medical complex . . . dedicated to the suppression of truth concerning health hazards" at the worksite. Mr. Brodeur warned that a society which will not protect itself against the catastrophic effects of poisoning may not be willing to protect itself against any other danger.

—Mr. Kenneth Hed, consultant to the Navy Surgeon General for occupational health training.

NRMC Oakland

To Walk Again

In January 1976, MAJ Nikolaos Skyvalos, Greek Army officer, was on duty with a NATO border patrol, policing the border that separates Greece from Albania, Yugoslavia, and Bulgaria. When an advance scout announced there were suspicious movements around the next hill, MAJ Skyvalos went to investigate. A sniper's bullet rang out, hitting him in the lower abdomen. As he fell, he activated a land mine—and the resulting explosion mangled his legs.

MAJ Skyvalos spent the next three months in a Greek hospital recovering from his injuries and regaining his strength. Then came the challenge of learning to walk again. Through the help of NATO, a European prosthetic technician was sent to fit him with new legs. It was hopeless—the artificial legs were too cumbersome and painful. MAJ Skyvalos became acutely depressed, and began to believe that he would never walk again.

When told the Greek Government would pay his travel and hospitalization expenses in any NATO country to have another set of artificial legs made, MAJ Skyvalos chose the United States—specifically, the Naval Prosthetics Research Laboratory at Naval Regional Medical Center Oakland. He and his wife arrived at the medical center on 18 Oct 1976. Assistant chief nurse CDR C. Marion Belezos and Kathy Taylor of the decedent affairs office took on the job of interpreting for the patient, who, it turned out, knew their relatives in Greece.

What happened next is best expressed by the patient himself, in his letter to the medical center commanding officer, RADM Henry A. Sparks (MC):

Most respectfully, Admiral Sparks, allow me to say the dream of walking again is a reality, and more wonderful than it was imagined. Everyone in the hospital, civilian and military, has



MAJ Nikolaos Skyvalos
"My thanks will be eternal"

treated me as a brother. I shall forever cherish the understanding, kindness, helpfulness and love, and above all the determination to keep me from being depressed and giving up.

There are not words in any language that will express how I feel about everything that has been done and is being done for me. I know that it was God's will that brought me here, and my thanks will be eternal.

With the final fitting of my legs, I walk without assistance. I am a complete man; a normal person on two legs with my faith restored. This I owe to your staff.

Another thing that has contributed to my happiness is the reassurance of the friendship of the people of this great America for my country.

Admiral, your entire staff, civilian and military, are superior individuals with wonderful hearts and souls devoted to the handicapped. The world must know about this, and will. When I leave here, half of me will always remain in America. Half my body and half my soul belongs to the American people. I have a dedicated responsibility to inform my superiors and the people of Greece how wonderful the Americans are, and of their dedication to help others.

I will never forget, as long as I may live, what you have done for me. May God protect this great country and her people.

With my sincerest respect,
Nikolaos Skyvalos
An Officer of the Greek Army

Special Report

The Surgeon General's 8th Annual Specialties Advisory Conference and Committees' Meeting

Accountability in Graduate Medical Education

THIRD PLENARY SESSION
24 September 1976

The Director of Clinical Services Committee

CAPT D.C. Good, MC, USN
Director of Clinical Services
Naval Regional Medical Center
Portsmouth, Va.

This morning we will learn the results of the various SAC 8 committees' deliberations. Each issue will be discussed for up to ten minutes. After the last presentation there will be a question and answer period.

There will be time to discuss only a few of the most important issues considered by the committees. I certainly don't want you to think that these few issues are the only problems we face.

The first presentation is from the DCS (Director of Clinical Services) Committee. The director of clinical services is the assistant to the commanding officer, and succeeds to command in the CO's absence. The DCS is the purveyor of health care for his medical region, for certain fleet units, and occasionally for the Fleet Marine Force. Because his responsibilities include clinic care, education, and quality control for accreditation, the attention of the DCS is necessarily spread thin. The DCS Committee therefore recommended that the position of director of medical education be permanently established at Navy regional medical centers to coordinate the education programs.

This account of SAC 8 is an edited (sometimes paraphrased or abbreviated) version of the remarks and presentations of specified individuals. Their comments do not necessarily reflect official views of the Navy Department or the naval service at large.

SAC 8 was held 21-24 Sept 1976. The first plenary session and the Navy Surgeon General's address at the second plenary session were reported in the January 1977 issue of *U.S. Navy Medicine*.

A second issue discussed in the DCS Committee was indoctrination into operational medicine, and management of that specialty. Staff medical officers receive operational medicine indoctrination through surgical teams, surgical support teams, ship's pools and Marine augment units. Many of the last group of newly commissioned medical officers had previous service either with the fleet or as clinical clerks; few were receiving their first exposure to the Navy. These experienced officers did not really need a two-week indoctrination course; any needed indoctrination could just as well have been provided at their first duty station.

If an Operational Medicine Service were established at naval regional medical centers, surface, air, submarine and Marine specialties could be integrated into a single functional unit and become the nucleus for indoctrination, continuing operational education, and management of newly commissioned medical officers into a force ready for deployment during any operational contingency. We therefore recommend discontinuation of the two-week indoctrination course previously experienced medical officers now undergo before reporting to Navy regional medical centers; instead, these officers should be indoctrinated at their medical center as needed.

The single-manager pool has been a great means to educate and reeducate medical officers to shipboard living conditions and limitations. In their three months aboard ship, they learn to appreciate the problems of being at sea. Medical officers have not always been overjoyed by the idea of spending three months away from their specialty, but they have been willing to deploy for up to 90 days because such deployment would improve their management of active-duty patients. Upon their return, their comments were often favorable: they had learned much, but were glad to go back to their clinical practice. If single-manager pool deployments were to be extended to six or eight months, medical officer acceptance of the pool would change. It is therefore recommended that single-manager pool deployments continue to be limited to 90 days.

During this period of austerity each command has considered reductions. Vertical cuts of medical services would reduce expenditures, but for savings to be substantial and timely the cuts would have to be made in services that treat large numbers of civilians: the elimination or drastic reduction of obstetrical services, for example. But much of the savings would be countered by an increase in operation and maintenance expenditures for outservice care of the pregnant active-duty woman. Closing a branch clinic possibly could reduce civilian employment and facility maintenance, but it would have considerable negative political impact and would greatly reduce morale. A vertical cut to eliminate care to a certain category of recipients, such as retired personnel or dependents, would seriously impair medical education, which depends so heavily on these patients to provide comprehensive medical experience. Vertical cuts of these patient categories would sound the death knell for Navy graduate medical education and for Navy medicine as we know it today. Navy medical practice would be less attractive and the Navy would certainly have less opportunity to recruit and retain physicians for its Medical Corps. We therefore recommend that vertical cuts in medical care not be implemented, except as a last resort.

Internal Medicine Committee

CAPT D.O. Castell, MC, USN
Chief, Internal Medicine Service
National Naval Medical Center
Bethesda, Md.

When you assemble a number of men to have the advantage of their joint wisdom, you inevitably assemble with these men all their prejudices, their passions, their areas of opinions, their local interests, and their selfish desires. From such an assembly can a perfect production be expected?

This statement was made by Ben Franklin to describe the authors of the Constitution of the United States. The combined assembly of the chiefs of medicine and medicine subspecialties must certainly be guilty of many of these indictments. Despite our deficiencies, we have prepared a statement relating to a crucial issue facing Navy medicine: the definition of an internist in 1976, and the relation of the internist to the family practitioner and the proposed operational medicine specialist in view of the recently defined mission of the Navy Medical Corps.

Defining the internist and clarifying his position in medicine today is a complex problem requiring clear identification of the roles of many other medical specialists. In the civilian community it has been suggested that the internist is one of that group of individuals who will provide primary patient care—a group that should

include the family practitioner and the pediatrician, with some experts suggesting that obstetricians also be numbered among primary physicians.

In military medicine the problem of defining the role of the internist is compounded by the recent OPNAV clarification of the Navy Medical Department mission which indicates that dependent care, and therefore the treatment of families, may have decreasing scope in the practice of medicine with the Navy.

Another complication is the proposal that we now define yet another form of specialist—the operational medicine specialist—who would be more attuned to the unique needs of military medicine. Further magnifying the dilemma is the need to clarify the role of internal medicine subspecialists, and their relation to our patients.

Let us look at each of these problems in some detail. We all agree that the internist must play a major role in the primary care of patients. This has become a necessity not only in the Navy because of the decreasing numbers of general medical officers, but also throughout the civilian medical community. As a result, the American Board of Internal Medicine has decided that training in ambulatory patient care must become a crucial component of internal medicine training programs in the U.S. Obviously, one of our problems is to define just how far-reaching these ambulatory care responsibilities should be, and how the internist should relate to the other primary care physicians I mentioned earlier.

We senior Navy internists are concerned over the marked escalation in the number of family practice physicians and family practice training programs in the Medical Department. Although there is no question that many families who qualify as military dependents and dependents of retired personnel definitely need and deserve medical care, these patients are clearly not included in the primary mission of the Navy Medical Department, which is to provide medical support for active-duty personnel. It therefore seems somewhat paradoxical for us to emphasize training family practitioners at a time when we are agonizing over ways to provide operational support. Training billets being converted into family practice programs may possibly be used more properly to augment internal medicine training. We suggest that serious consideration be given to rethinking the need for and wisdom of continued escalation in family practice training in the Navy.

An equally important consideration relates to the requirements for fleet support. We are presently sending fully trained internists and subspecialists in internal medicine to operational duty aboard ship. Would it not be equally difficult to justify sending a family practitioner to sea duty? And wouldn't such a practice generate greater problems for us in terms of morale?

Let us now consider the proposed new specialty of operational medicine. Admittedly, we must approach any discussion of this topic with considerable naiveté;

since none of us has "been there before," we know little about the long-term specifics of such a training program. However, we do have a gut reaction that more appropriate measures might be found to ensure operational support capability. We propose, for example:

- institution of operational training during the graduate level one year at Navy training hospitals;
- careful scrutiny of the already established curricula of Navy flight surgeon and submarine training programs to ensure modern capability for operational support in these areas.

At a time of decreasing resources, with each training billet becoming a precious commodity, it would seem that the last thing we need is another specialty. We suggest that operational needs could best be satisfied through improved general training of our GME-1 trainees, and assignment of these physicians to a tour of operational duty following their GME-1 training. These individuals would form an effective cadre of career-oriented physicians ready to meet the Navy's needs for operational medical support.

In addition, we suggest that serious consideration be given to establishing a BUMED-sponsored continuing medical education mini-course in operational medicine. This training could be required for all medical officers at naval regional medical centers to maintain their skills in operational medicine and help assure their readiness.

The question of the number of internists required to satisfy the Navy's needs and the distribution of these internists into the various subspecialties remains to be answered. We have wrestled with this problem for years and seem to be no closer than before to the ideal solution. We agree that we must continue to train, at the very least, the same number of internists and medical subspecialists as we were training before we phased out the programs at Philadelphia. Without any Berry Plan accessions, and with the present poor physician retention rates, we will be hard-pressed within the next two years to provide even reasonable subspecialty staffing in our tertiary care training centers. The subspecialist deficiencies projected for our secondary care facilities make the Navy Medical Corps uncomfortably vulnerable relative to the standard of medical practice in the civilian community.

Finally, it seems that one possible way to expand our limited resources is to get more mileage out of our trainees in internal medicine. We suggest the following career pattern: a basic medicine GME-1 year followed by a year of operational duty, and then by two to three years of internal medicine residency. Most trainees should then be expected to fulfill their obligation as an internist in an appropriate assignment before being considered for subspecialty training.

As our last recommendation, we strongly suggest that all payback obligations for training become year-for-year as they were in the past.

Utilization of Family Practice

CDR R.W. Higgins, MC, USNR
Chief, Family Practice Service
Naval Regional Medical Center
Charleston, S.C.

Family practice is still in its infancy and there are many physicians who have not yet been exposed to this new specialty; consequently, a variety of misconceptions have developed. Foremost among these is the fact that many individuals believed the family practitioner would take the place of the general medical officer. This has never been the goal of family practice in the Navy, or anywhere in the country for that matter. The family practitioner provides comprehensive and continuing care to the entire family. He manages preventive medicine aspects as well as care of acute and chronic diseases. In facilities where this is being done according to design the plan is working extremely well. In Jacksonville, for example, family physicians perform very much in line with the philosophies of family practice. They have taken over care of the active-duty and dependent personnel of six VP squadrons as well as a large number of active-duty and retired families in the area.

The success of family practice at Jacksonville is well attested to. A letter of commendation was sent from the VP wing at Jacksonville to the Chief of Naval Operations; along the way, the letter acquired a number of outstanding endorsements recommending that family practice be made available to operational units and the members' families throughout the Navy. Also, the waiting list for admission to the family practice program keeps growing—a reflection of not enough family physicians.

An interesting project was the inclusion in a family practice program, on a voluntary basis, of all members and families assigned to a destroyer homeported in Charleston. The ship's commanding officer, who had been a severe critic of the Navy Medical Corps, at his change of command ceremony cited the Family Practice Clinic as one of the three most important units to support his mission. He said this support had done more for morale, retention, and increased productivity among his crew than any other program he had seen in his 17 years of service.

In another project both crews of a nuclear-powered fleet ballistic missile submarine are being included in the practice of one of our family practice staff physicians. Again, the response has been extremely positive. The physician is considered a part of both crews and occasionally goes to sea for a few days with them, although he does not deploy on a patrol with them. The security of knowing that their families have a physician who accepts the responsibility for family health care has given a tremendous boost to the crew's morale.

At the Naval Weapons Station, Charleston, we have a satellite Family Practice Clinic in the 1,600-family housing area. Though only approximately half these families are officially enrolled, most of the others have required either no medical care or only minimal care, which the clinic has provided. The clinic has also provided all occupational medicine services, as well as military sick call for active-duty personnel. This support was accomplished by a staff of three family physicians, a nurse practitioner, and a physician's assistant. Again, acceptance has been overwhelming.

At Pensacola, Fla., the Family Practice Program is prospering with excellent command support. Recent surveys of beneficiaries show an extremely high degree of acceptance. Letters from all classes of beneficiaries frequently reach the commanding officer; these letters give strong support and encouragement to the family practice system of patient care. Not only are nonmedical people using the Family Practice Clinic, but we are also noticing a significant increase in the number of physicians who are adopting the Family Practice Clinic as their basis of medical care.

At the Naval Aerospace Medical Institute, we have created an approved elective Family Physician/Flight Surgery Program to provide some operational extension for the career-oriented Navy family practitioner. Inquiries from medical students are significantly increasing in this area. The first two family practice flight surgeons graduated this summer. Two more residents have entered the program. This is a step towards combining family practice with specific operational billets.

At Camp Pendleton, Calif., the Family Practice Program has the unique task of providing primary care to the largest Marine amphibious base in the world. We not only care for dependents but also for a large number of unmarried active-duty personnel.

Since its inception the number of families signing up for family practice has grown considerably, with long waiting lists attesting to the increasing popularity of the program. It has become clear to me that such patients are most grateful for the type of care that stresses comprehensive care of the entire family, on a continuing basis, by one specialist.

These are examples of results at the four family practice training hospitals where command support has been excellent. (A large part of our success is directly related to the strong, sincere support given us by other specialties.) But elsewhere in the Navy the story is not so good. Assignment of family physicians has been as groups rather than singly, which is a good concept. The family physician assigned alone has, in all cases, been used as a general medical officer. But even where assigned in groups, family physicians have not been allowed to practice in the concept of family practice in most cases, and this has led to dissatisfaction and poor retention.

A few more misconceptions must be addressed. Family physicians do treat single active-duty members.

Family in such cases is defined as a single-member family, although for statistical purposes we count four single members as one family. We also treat widows and other single-member families, such as dependent children or the child of a divorced couple.

Another misconception concerns psychiatry. We do not practice psychiatry *per se*, but we do address behavioral problems such as alcoholism, marriage problems, school problems, and minor emotional problems.

Another misconception is that family practice does not support the operational forces. We do provide care for crewmembers and their families in many varying situations, and our residents in all four programs are exposed to operational medicine as an integral part of their training.

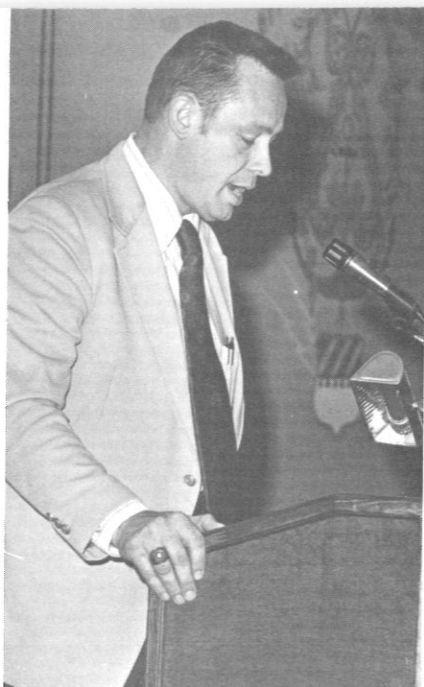
People who have observed family practice in its proper environment can attest to its success and value. But to be a viable specialty, family practice by its very nature must depend on the support of all other specialties. Naturally, this support must come from the specialists who help train our residents, but must also be present in the form of consultation and continuing medical education in all naval facilities. For those of you in other specialties who have strongly supported family practice, we are appreciative. For those of you who still question the validity of family practice, we ask that you look objectively at those who are more closely associated with this new specialty. Family practice has a definite place in Navy medicine, but it must be accorded the right to follow its philosophies to the same extent that other specialties follow theirs. Family practice must also have the continued support of all other specialties in order to survive in the Navy.

Preservation of Identity of Operating Specialists

CAPT F.E. Dully, Jr., MC, USN
Flight Surgeon
Naval Aerospace Medical Institute
Naval Aerospace and Regional Medical Center
Pensacola, Fla.

Operational medicine is more than the availability of a hospital bed for every sick sailor and Marine. The continued existence of a recognizable, dedicated cadre of appropriately trained naval medical officers who have selected as their primary mission medical support to and in the fleet or the operational forces is in the best interest of the Navy Medical Department. The line has come to recognize that the practice of medicine in the field, at their side, is a highly visible and indispensable form of support.

For the last 15 years, one branch of preventive medicine, recognized as a certificated board specialty, has had fleet visibility while functioning within the con-



SAC 8 Speakers: (top) CAPT Early describes Navy need for computerized tomography; RADMs Elliott and Rupnik participate in panel discussion; (bottom from left) CAPTs Cordray, Castell, Miller



straints of the non-hospital operational milieu. Other areas of Medical Department responsibilities in the fleet arena were filled by similarly devoted physicians who made a choice between the practice of medicine in the Navy and the practice of Navy medicine but, as in the case of aerospace medicine, were unable to supply the numbers required to fill existing billets.

Though their work has not always been recognized as valuable, these operational physicians, serving by choice in the field, made a contribution, freely offered, worthy of recognition and emulation, in a field that some members of the profession found relatively unchallenging or unrewarding. A health care delivery system for a population of pre-screened, ostensibly healthy adults included not only the care of the acutely ill and the worried well, but also preventive measures and planning for such mundane problems as sanitation, mass casualty control, environmental stress, occupational medicine, and the man-machine interface. Where these medical talents were not available, the jobs went undone. The line has rightly identified these unfilled billets as worthy of our attention.

At the same time, involvement of our hospital conferees in accomplishing this task offers the opportunity to bridge the gap between these two "town-and-gown" elements, and to increase mutual respect between the two groups. Physicians in operational areas absolutely

need the recognition and support of their hospital colleagues, and vice versa.

Physicians in operational medicine sometimes make do with less than optimal settings and equipment, confident of hospital backup. Hospital-based physicians bring to bear for us, on demand, all that modern facilities and talent can offer. Each group needs the other. Each is in his place by choice. Each has a worthy mission. Each is proud of his role, and each basks in the recognition of his patients or the people he serves. Some physicians in both groups boast of American board certification as professional credentials.

By blending these two disciplines, a broader based practitioner can emerge who is more clearly identified with the U.S. Navy. The proposed hospital educational contact can only increase the professional stature of the operational physician, while the newly cross-trained clinical colleague can share the operational identity, learn firsthand the limitations imposed by the operational milieu, and better support the fleet on his ultimate return to the hospital.

Our career medical officers must be as comfortable serving aboard ship and on line staffs as they are in hospitals and clinics. They must learn to manage a health care delivery system, not a sickness care delivery system. They will then be truly Navy medical officers, not just physicians in the Navy.

Adaptation of the Internship To Fit Navy Requirements

CAPT D.R. Cordray, MC, USN
Department of Pathology
Naval Regional Medical Center
Portsmouth, Va.

We members of the Internship Committee have noted the theme of accountability presented here and the accentuation of the importance of operational medicine. Our main proposal, therefore, is to recommend that the G-1 year be tailored to better match the needs of the fleet and the Marine Corps. At the same time, the first-year graduate experience should provide opportunities for young physicians to learn more about the various medical specialties and to develop professional maturity.

We propose a flexible program which would include medicine, surgery, orthopedics, one month in the emergency room, at least minimum experience with anesthesiology, and two to four months of electives. The electives should be individually planned clinical rotations designed to provide experience in clinical areas that may not have received adequate attention during medical school.

If the foregoing plan were to be adopted throughout the Navy, we would recommend that scholarship participants be made aware of this policy and of the likelihood that they would be required to serve at least one year of operational duty prior to residency assignment.

We also believe that senior students who have a particular residency interest should discuss their G-1 rotations with the prospective service chief prior to submitting their questionnaire to the intern coordinator. This may permit the inclusion of electives which would be useful in their proposed residency as well as compatible with a year of general duty.

With regard to intern indoctrination, the Committee believes that a two-day to three-day indoctrination program for incoming G-1 physicians should be offered at each teaching center. This program should include orientation to the Navy as well as to the Medical Department and the individual medical center. We recognize that indoctrination programs are offered at the various hospitals, but we believe these programs should be organized and coordinated.

We suggest that graduating medical students be ordered to duty during the last week in June so they can complete indoctrination and other preparations before assuming intern duties on 1 July. Some thought should be given to more specific orientation to the appropriate operational training programs or assignments during the intern year, for we note that other committees have come up with the same idea. This could be done on an individual basis or in small groups as the workload permits, and should not displace or interfere with didactic

or practical medical education. Each intern preceptor should be furnished with up-to-date brochures providing information on submarine medicine, aerospace medicine and other programs.

This coming year some 97 scholarship graduates will not get Navy intern assignments. Those students who will not be deferred for residencies after their first post-graduate year should be informed at the start of the year that they will be expected to assume all-around medical responsibility, and that they should plan their internships accordingly.

We believe that these duty-oriented G-1 rotations will meet American Medical Association specifications for flexible internships. Such a flexible program will best serve both the young physician and the needs of the Navy.

The Essential Continuum of the Pediatric Residency

CAPT D.W. Bailey, MC, USN
Chief, Pediatrics Service
National Naval Medical Center
Bethesda, Md.

The Pediatric Specialty Committee chose for its ten minutes to share with you a dilemma we have confronted in the past year. As many of you already know, the American Board of Pediatrics decided several years ago not only to disapprove the concept of the free-standing internship but to remove the word *intern* from its vocabulary. This has caused frequent confusion in graduate medical education meetings. Students who enter pediatric training straight out of medical school are now designated pediatric level one or PL-1 residents as far as the American Board of Pediatrics is concerned. This change coincided with the Navy's decision to phase out free-standing or rotating internships, so all went well for a short period. Now, however, the needs of the Navy dictate a return to the basic internship to prepare to meet our operational commitments.

The challenge which faces us, then, is to compensate for this diverse swing of the pendulum while avoiding any weakening of our four residency programs and maintaining the strength of Navy pediatrics.

In way of background I should mention a few interesting aspects of this problem. First, as far as can be determined, and assuming no major change in our eligible beneficiaries, the pediatric workload in the future will be considerable. We continue to provide a major portion of the care to ambulatory patients, even when family practitioners are present in the same facility. At present we estimate that we are about 25 pediatricians below our optimum numbers. This is about 9% of our ideal level for patient care. This shortfall can be projected to increase to approximately 20% in Fiscal Year

1978 and possibly 40% in Fiscal Year 1979. We must, of course, do what we can to minimize this trend in the face of our operational and other commitments.

Before 1975 a pediatric trainee could become board eligible by satisfactorily completing a nonpediatric G-1 year plus two years of pediatric residency. But now all individuals who began training on or after 1 July 1975 are required to have three years of clinical pediatric residency to be board eligible. It is the strong and unanimous belief of the Navy pediatric program directors, a belief supported by our board's representatives, that three years of pediatric residency training should be in a continuum in time.

Another problem that we have become acutely aware of this week is with the PL-2 or pediatric level two applicants. There appear to be an increasing number of these individuals. We had four or five this year and at least nine last year. They have been brought on active duty following a year of pediatric training in a civilian institution and are now applying for nonexistent second-year openings in our programs. Obviously, this creates a major problem for such individuals when they complete their training. It is also equally obvious that the optimal continuum of which I just spoke is lost.

Finally, to address the major issue of our operational needs, our requirement to train pediatricians must, of course, be balanced against our urgent requirement to provide appropriately trained physicians for operational billets. We have, therefore, come up with a proposal, the goal of which is to ensure insofar as possible a continuum of training for all applicants to Navy pediatric residency programs.

Program applicants can be considered as falling into one of two major categories: applicants from the field, and applicants who have just graduated from medical schools. Some of the applicants from the field may not have had a year of pediatric training—the so-called PL-0. We believe that as many of these as possible who are qualified should be matched to PL-1 openings and offered a three-year contract. This, of course, reflects no change in present policy.

Another group had completed a single year of straight pediatric training and had then been brought on active duty to serve in operational billets. These physicians should be counseled immediately and consistently to consider applying for PL-1 and PL-2 openings (the latter are extraordinarily scarce). This may add one year to their graduate medical education, but we don't see any other way to resolve the acute dilemma. We expect, however, that the proposals that follow should, over the next two to three years, reduce this unfortunate group of individuals to zero.

As far as medical student applicants are concerned, we propose that a carefully selected number be allowed to fill any PL-1 vacancies that exist after all selections have been made from applicants from the field; these students should be given a three-year contract, as has been our policy. It can be assumed that the number of

students required to maintain program strength and quality will be very small in the next one to two years. Parenthetically, this year students fill substantially fewer than 50% of the slots, a steady decline that should continue. As the number of qualified applicants from the field increases, medical student selectees should drop to zero.

Medical school applicants who are not selected for a full pediatric residency should be counseled to seek a Navy basic medical or basic surgical internship as a preferred alternative to prepare for an operational tour; after this tour, they may reapply for a three-year pediatric residency.

Students not selected for any Navy G-1 program should be divided into two groups according to projected needs for general medical officers versus pediatricians. One group could be given a three-year deferment, as necessary, to complete pediatric training in a civilian program before being called upon for active duty. The remainder should be encouraged specifically to seek a diversified civilian internship, not a civilian PL-1 internship, which will prepare them for their operational tour; after their tour they may apply for a full pediatric residency.

A brief comment on the impact these recommendations might have: Ultimately, these recommendations could result in as many as 16 additional training billets, since the numbers of graduating students permitted to enter directly into Navy or civilian pediatric residencies and to complete these residencies without interruption can be expected to decrease over the next few years to a minimal level, if not to zero. On the positive side, we believe that with this policy pediatric trainees will become more mature, career-oriented physicians with a heightened awareness of the overall needs of the Navy Medical Corps. They will also have the background, experience, and training they need to be better naval officers and to participate more competently in the operational aspects of our mission.

Audiometry Screening

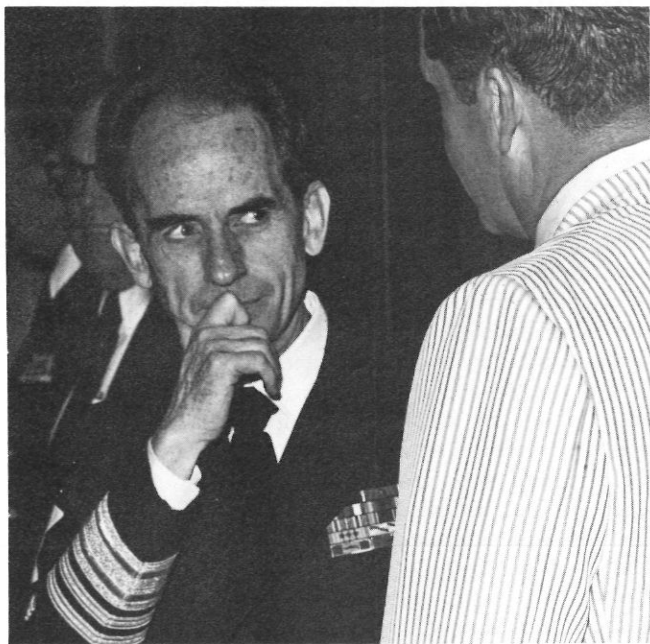
CAPT T.F. Miller, Jr., MC, USN
Chief, Department of Otolaryngology
Naval Regional Medical Center
Oakland, Calif.

The line item cost of compensation for hearing loss paid to civilian and military employees of the Department of the Navy is greater each year than the operation and maintenance budget of most of our naval regional medical centers. We must exert a concentrated effort to reduce this needless expenditure—an effort which will, at the same time, reduce the number of disabled and handicapped service members and Navy employees.

Nine years ago I was asked to help with the revision of BUMED Instruction 6260.6B. The impetus for this revision was an increase in the number of legal actions on the part of civilian and naval workers. Unfortunately, these actions have continued and, I am sorry to say, are often settled disproportionately in favor of the individual on the basis of unscrupulous or inadequate findings by some of our civilian colleagues. Equally unfortunate is the all too common discrepancy between disability payments, which are excessive for the civilian Navy employee and probably nonexistent for the active-duty member with the same degree of hearing loss.

BUMED Instruction 6260.6B provides adequately for identification and protection of the noise sensitive individual. Legislative action implementing Occupational Safety and Health Act (OSHA) regulations further directs us to comply with the altruistic and practical concepts of comprehensive hearing conservation programs. Issuing ear plugs and advising annual audiograms without adequate follow-up falls far short of what is required.

Our recommendations follow the accepted format being used in some civilian industrial communities. Initial hearing testing and record keeping will be done by audiometric technicians who will work under the supervision of specialists in environmental health. Consultative services and the necessary training for these technicians will be provided by audiologists and otolaryngologists from the departments of otolaryngology in the regional medical centers. In three separate courses at NRMOC Oakland, we have already trained 36 audiometric technicians who are eligible for certification. These people are actually working in the region.



Leading his first conference as Surgeon General, VADM Arentzen considers the views of a SAC 8 participant.

To satisfy the requirements with which we are being tasked, we need medical officers in the field who are educated in hearing loss, the interpretation of audiograms, and the effects of noise pollution. It is mandatory that all basic medicine and basic surgery interns spend at least one month on an otolaryngology rotation. Besides becoming familiar with hearing problems, these physicians will be better qualified for duty in the field and with the fleet, since several studies of complaints presented to primary care physicians show more than one-third to be related to ear, nose, and throat.

Additional audiologists will be required in each region. We suggest commissioning them as Medical Service Corps officers as the Army and Air Force do.

Each program would be operated at a regional level. It would be mandatory that noise sensitive individuals be removed from noise-hazardous areas upon the recommendation of a competent otolaryngologist.

On the Necessity for Computerized Tomography in Naval Hospitals

CAPT C.B. Early, MC, USN
Chief, Neurosurgery Service
National Naval Medical Center
Bethesda, Md.

Computerized tomography of the intracranial contents is not just a significant improvement in the methodology of diagnosis in neurological disease. It is a quantum leap forward in this area. Its importance in neurological disease is considered by many to be equivalent to the introduction of antibiotics in infectious disease management, or to digitalis in the field of cardiology, or the introduction of modern techniques of anesthesia or aseptic technique in the field of surgery.

Basically, computerized tomography is merely the application of computer science to radiographic techniques. Rather than photographic plates, electronic sensors are used to detect the intensity of X irradiation passing through the tissue to be studied. As in conventional tomographic techniques, each point in the tissue to be studied is subject to transmission of X irradiation from different directions. The most common method in use today is to pass the X-ray beam through the tissue from 180 different angles, each one degree apart. Then the quantitative value of transmission for each point for each angle is multiplied by the similarly determined value for each of the 180 different angles.

Thus, differences in X-ray transmission are raised to the 180th power. Where very small differences in X-ray transmission may not be discernible on the usual X-ray plate, they become almost as clear as the difference between black and white when raised by computer to the

180th power and displayed electronically.

The value of applying this technique to intracranial diagnosis has proven itself beyond any reasonable challenge in practice. In a large series of cases at the Mayo Clinic and the Massachusetts General Hospital, where equipment of this type has been in use for nearly three years, the yield rate—that is, the ability of the technique to delineate structural change due to intracranial pathology—is higher than either air or positive contrast encephalography, radionuclide scanning techniques, angiography, or all of these methods in combination. The rate of corrected diagnosis for computerized tomography alone is 96% or better.

Computerized tomography (CT) is not only capable of delineating the difference in radiodensity between tumors or other pathologic entities and normal structures, but also of showing the configuration of normal structures. The ventricular system, the cerebrospinal fluid subarachnoid cisterns, gyri, and sulci are clearly seen. Structures as small as the cranial nerves, medium-sized vascular structures, and the extraocular muscles are delineated. New developments in improving spatial and density resolution make it possible to distinguish grey matter from white matter.

With all of its advantages, CT is a truly minimal risk. Radiation dosage to the head is in the range of about two rads. Used without enhancement, it is totally noninvasive. Using enhancement—a process whereby a radiopaque medium, such as hypaque, is placed in the bloodstream to increase the radiodensity of relatively vascular tissue or areas of breakdown of the blood-brain barrier—the degree of invasiveness is only equivalent to that of an intravenous pyelogram.

One of the most important uses of CT is in the area of acute trauma. The presence of an expanding intracranial clot can be determined in five minutes, whereas previously angiography was required to provide such information—at a cost of one to two hours and a considerable increase in manpower required. Such delays can easily mean the difference between life and death, or perhaps even more important, between useful and useless life.

I have not addressed the subject of whole body computerized tomography primarily because it is obviously not within my purview. Though it has not been well proven, as compared to cranial CT, it shows considerable promise. When certain difficulties arising from motion and air-filled cavities are overcome, it may conceivably become as valuable as cranial CT. As spatial resolution improves, its value in intraspinal and orbital diagnosis is becoming evident.

Computerized tomography is cost effective. Where properly used, it has been shown to dramatically decrease the number of more invasive, high-risk, and equivalent or higher cost diagnostic procedures. Angiography is usually reduced by a factor of about one-third. Ventriculography and pneumoencephalography are reduced to only about 20% or 25% and radionuclide

scans to about one-third of the number required before utilization of CT. Savings in these areas alone are capable of defraying the cost of CT, especially considering the savings in manpower. The revenue derived from CT in institutions where it is used on a fee-for-service basis amortizes the cost of the equipment in short order. Most facilities find that although amortization may have originally been programmed for two to four years, it is usually achieved in less than half that time.

Present rates for CT scanning range from \$200 to \$400. Because of its cost effectiveness, civilian hospital administrators not only greet it with open arms, they work diligently to obtain it. Installation of CT equipment in military facilities has lagged woefully. Nearly three years have elapsed since initial inquiries were made into the possibility of obtaining units, but the first unit has yet to be installed in any U.S. military medical facility. We hope that the Navy's first CT unit will be installed in NRMHC San Diego next April.

The standard of practice in the treatment of neurological disease has, for at least a year, required the use of CT. The neurological disease population is well aware of the capability of CT. It is neither morally nor ethically proper, nor professionally proper, to subject someone to a more invasive, more uncomfortable, more risky procedure when the diagnostic power of CT is available. Furthermore, in some cases such substitution is impossible, because the knowledgeable patient will not accept it.

The lack of CT capability in our hospitals has already cost us countless hospital days. What do you do with a patient aeromedically evacuated to Bethesda from Florida for neurological diagnosis, when you find the earliest he can be scheduled for CT at the National Institutes of Health is six weeks hence?

CT is required in all naval hospitals charged with the management of neurological disease. It has been suggested that perhaps these hospitals should obtain CT services from other facilities in the vicinity. Such reasoning is fallacious. In all institutions where CT has been installed, its use has rapidly increased until equipment time is at a premium. Frequently this has resulted in a second or third unit being obtained. Such has been the experience at NIH where, despite the presence of three units, routine CT service available to Bethesda (which is right across the street, as close as you can get) takes about six weeks to obtain, and absolute emergency service takes about four days. This experience clearly, and I believe irrefutably, demonstrates the need for our medical facilities charged with treating neurological disease to have their own units. As a matter of fact, it might be more realistic today to be debating *how many* units each of our facilities should have, rather than whether we need the first unit.

Obviously, the proper standard of treatment of acute craniocerebral trauma cannot be effected today without CT being in-house. It is inconceivable that proper

management of such trauma would include calling for an ambulance, waiting for its arrival (if one is available at all), loading a patient on it, taking the patient to a nearby facility, unloading the patient and taking him into the facility for CT, loading him back into the ambulance (assuming it is still available), and bringing him back to our facility for treatment while an intracranial bleeding point causes an expanding blood clot to further compress an already seriously sick brain. CT must be in-house.

CT must be provided in-house for training purposes. Board examinations in the three specialties—neurology, neurosurgery and radiology—will include material on CT by 1977. Are we to send our residents outside the service for this training?

In summary, it is strongly recommended that the schedule for equipping our facilities with CT be accelerated, and that all facilities charged with the treatment of neurological disease be provided CT equipment at the earliest possible time, certainly no later than Fiscal Year 1979.

Oral Surgeons Committee

CAPT T.W. McKean, DC, USN
Chief, Oral Surgery Service
Naval Regional Medical Center
Oakland, Calif.

One subject we discussed was the level of manning and utilization of all personnel with oral surgery training. It was recommended that Navy requirements for oral surgery training be reviewed in order to develop a staffing formula for training oral surgeons in the Navy Medical Department.

Additionally, to help the Bureau of Medicine and Surgery identify appropriate officers for oral surgery education assignments, our committee reviewed the qualifications of eligible, trained oral surgeons who might be considered for future teaching staff assignments.

The general practice residency programs in dentistry conducted at our naval teaching hospitals were reviewed, as were the methods of instruction. We believe these programs are valuable to better prepare a general practice resident for service with the operational forces. It was further recommended that, in keeping with the intent of existing directives, a standardized hospital orientation procedure for general practice residents be implemented at all our training hospitals.

Another big item particularly important this year to all parts of the Medical Department is credentialing. Our committee's strong opinion was that dental officers should be included on credentialing committees at all naval hospitals. It was recommended that in smaller hospitals additional qualified dental officers be brought

in from the dental regions to help credentialing committees review qualified applicants for the delivery of dental health care and to assist the commanding officer in his credentialing.

Another important area is operational medicine. Operational rotation of oral surgery residents was discussed; such rotations were highly recommended as an integral part of each training program in order to enhance the training indoctrination of naval oral surgeons. This practice will better prepare oral surgeons for duties with the operational forces and also for their return to assignments in naval hospitals.

Radical Approach to Health Care Delivery

CAPT H.J. Sears, MC, USN
Chief, Psychiatry Service
Naval Regional Medical Center
Portsmouth, Va.

Let me begin by saying that this is not in any way a radical approach. It is how I see the reality of our situation, some of the implications and some possible approaches for change. These approaches might *seem* radical in the shift of money, training and person power that they imply.

The issue I want to present today is simple. It is not new, yet it is repeatedly overlooked and denied. It has profound implications for our Navy health care delivery system. The issue is this: A conservative estimate indicates that the number of people with no significant organic illness who enter health care systems is some 40%. (There are studies by Locke and Gardner in *Public Health Reports* and Rosen and Goldberg in *Mental Hygiene*, among other sources.) Stated another way, this is the problem of the nonmedical patient—the “worried well”—in the medical setting.

In Navy medicine the percentage is probably higher. Duffy in his work at NRMCMC Portsmouth found that 34% of people entering an acute minor illness clinic had as their major problem a direct emotional or social problem. Duffy estimated that another 30% to 40% presented problems that did not actually require medical attention, but got such care, anyway. Much to our surprise, an informal study in a specialty clinic—not a psychiatry clinic—with referral only by physicians revealed that nearly 90% of patients had non-organic problems.

So for the sake of discussion let us say that 50% of the people entering the Navy health care delivery system present problems that reflect social and emotional needs rather than organic medical needs.

Recent well-documented studies indicate that in certain quality teaching hospitals 40% of the inpatients have what are essentially social and emotional needs

rather than organic medical needs. I believe that our hospitals probably reflect the same, if not a greater percentage. Nonsense, you may say, but the evidence is overwhelming.

We are all aware of the problem. The physician working in a busy clinic can spend approximately 10 minutes per patient or fall irretrievably behind with his workload. He has no time to really discuss problems with the patient. If there is significant organic disease, the physician usually spots it and does something definitive. If there aren't significant findings, he often ends up prescribing something, often Valium, or getting lab tests. The patient then leaves, with no resolution of the real problem, to return yet *another* time with the same need, to yet *another* medical officer, only to go through the same process. Eventually, if the patient is persistent enough or troubled enough, admission may ensue, with a further negative workup and the diagnosis, "There's nothing wrong with you." The process continues. Part of this distillate ends up in specialty clinics for more workup and sometimes for "definitive surgery."

My thesis is that approaches can be developed to deal more directly with these patients with less expense, less drain on precious Medical Department manpower, more definitive care, and greater provider and consumer satisfaction. In other words, *quality health care*.

You ask, how do we do this? I think there are many approaches to finding satisfactory solutions. Here are some steps which I believe need to be carefully considered:

The first step requires a major attitudinal change in health care delivery. We have to stop *ignoring* and *denying* the preeminence of social and emotional determinants of illness and illness behavior. There is sufficient evidence to document this. It is not simply a matter of opinion, it's a matter of fact! The problem lies in the realm of our own mental set and in the things that make us feel secure, not wanting to change the status quo.

Since World War II, American medicine has been characterized by burgeoning specialization and subspecialization. This has caused fragmentation, discontinuity, and impersonality in the delivery of health care. There has been an emphasis on cure rather than care. The tendency of specialists to congregate in hospitals has contributed to geographic maldistribution and has limited access to medical care for some segments of our population. This is where medicine is, nationally and in the Navy.

We need to return to concern for the careful history and the thorough physical exam, and to reserve the "million dollar workups" for patients who really need them. We need to move our specialists, staffs, and residents to outpatient and branch clinics where they can be accessible to patients for primary care. There specialists will be readily available to the general outpa-

tient staff for on-site consultation. There is a need to educate all Medical Department personnel in the sociology of the Navy health care system and its beneficiaries, and in the social and emotional factors in illness—its onset, assessment and management—as well as illness behavior. We need to get our scarce supply of doctors, nurses, corpsmen and other medical support personnel back to the front lines where they are needed and out of the inaccessible and congested hospitals and centers where they have congregated. We need to regionalize in *fact*, rather than on paper. We need medical care accessible to the patients, not simply for the convenience of our administrators and doctors.

We do not need the creeping specialization and subspecialization we now have. We need more primary care physicians *now*, and we need them where the patients are, not where we would like them to be.

There is an urgent requirement for more social workers and a referral network to handle the problems of living and the more serious emotional and social problems at the entry level. We need the support of the line Navy, who should take more interest in the maintenance of health. We must make it clear to line managers what they can do to promote health.

The Navy health care system is facing the same problems that medicine in general is facing in this nation: maldistribution of physicians, overspecialization, not enough primary care physicians, no continuity of care, dissatisfied consumers, horrendous costs. But we have a unique opportunity to develop a major health care system that takes sensible approaches to the resolution of these problems. We need to stop being defensive. We can develop a responsive and supportive relationship with the line that will make Navy medicine not only *not* threatened, but absolutely indispensable. We must develop a health care system in which primary care physicians are more than just the guys who have to take care of those patients who are not particularly interesting. We must have a system that does not define quality care in terms of our ability to treat serious disease well, especially when the overwhelming majority of our patients do not have serious diseases.

Manpower Requirements in Highly Specialized Services

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It is the opinion of specialized services such as surgery, urology, pathology and radiology that our most critical problem concerns support personnel for our professional staff. The support is primarily technical, but in some specialties the requirement is also in the



Clockwise from top left: RADM Cox; RADM Conder; CAPT Sears; CAPT McKean; CDR Higgins

professional category. The demands resulting from increasing sophistication of our medical care procedures affect all services within our medical centers and non-teaching hospitals.

The increased numbers of surgical procedures in our operating suites have been occasioned by the development of programs in cardiothoracic, vascular, and oncologic surgery, and by new neurosurgical and joint replacement procedures. These procedures, simply by their nature, require increased numbers of support personnel and extended time; they cannot be managed in the standard eight-hour working period. Cancellation of cases and delays are frequent. Therefore, to provide services in support of our patient care and teaching commitments the Surgical Committee felt an overlapping shift system was needed for operating room nurses and technicians. This system would provide better coverage during peak hours and would allow the operating day to be extended as necessary.

In the practice of urology there are similar problems in providing services to patients. The ratio of urology technicians to professional staff in most of our clinics is less than 1:1. In some areas there is only one technician for every two professional staff members. Our committee believes that, for a urology service to be effective, a ratio of four technical personnel to one professional staff member is in order. The service will then be able to accomplish the cystoscopies and laboratory and radiographic procedures that are done in clinics, as well

as to maintain equipment for patient use day to day.

Laboratories throughout the Medical Department are in critical condition, primarily from the technical standpoint. Analysis of productivity shows that most of our technical people and our civilian employees within the laboratories are producing three times above the national average. There is relatively little prospect of relief for us at this time. Review of quality assurance programs in the laboratories during 1976 has shown progressive deterioration in the quality of work. It is not by choice that this is happening to us.

Radiology services are experiencing some of the same problems we see in laboratories. But their most critical problem is the prospective deficit of approximately 26% among trained radiologists in Fiscal Year 1977, with a prospect of greater deficits in 1978. This will produce marginal service at best and may even result in loss of service in some areas. Professional recruitment for radiology is difficult and prospects for filling our vacancies are bleak since the enticements and incentives of the civilian community are so great.

The effect of manpower deficits is recognized readily by each specialty. The danger of error is ever present when there is less than optimal patient care support.

Inadequate support in specialized areas may also seriously affect our graduate programs. As we all know, certain specialties require specific numbers of operative procedures for accreditation of training programs. Program accreditation may be lost if staff-to-

resident ratios fall below the required level in radiology. Vertical cuts in services to align manpower with production would virtually eliminate training in programs such as pathology, radiology, and the surgical specialties.

Legal problems may arise. For example, there are requirements that a circulating nurse be present within an operating room when a patient is being treated. Errors in diagnosis because of low quality laboratory results could produce malpractice situations and perhaps costly legal encounters.

Federal legislation may be applicable to us, now and in the future. Occupational health and safety support is now required to meet the standards and regulations of the Occupational Safety and Health Act. Impending legislation may require set educational and experience levels for support personnel in federal institutions. We are closely watching federal legislation that may apply to laboratory services.

Again, our committee believes that significant increases in operating room nurses and technicians would enable operating rooms to overlap shifts and extend hours in which surgical procedures are performed. Such a change would affect not only surgical specialties but also other areas, particularly anesthesia.

Authorizing and billeting technical personnel on an accepted work unit basis might be a requirement; or contractual arrangements could be introduced to reduce volume and meet accepted standards. Contracting radiology services might be considered, for example, as might discontinuing radiologic services to non-active-duty beneficiaries, particularly at nonteaching hospitals. We might also develop radiologic technician expanders to assist radiologists. The radiological group has also considered the possibility of establishing a training program at NRMCMC Portsmouth to increase the number of Navy radiologists.

I think we all recognize that accomplishing any of these recommendations would be a monumental task, and in some areas would not be possible. The total Navy manpower situation has prospects of further reductions, not only in military authorizations and manning levels, but also in Civil Service ceiling points.

One final recommendation is in order: we should approach the future with confidence, with optimism, and with the self-assurance that we will continue to provide the best care we can with the resources we have.

DISCUSSION

CAPT Good: Admiral Arentzen, you have heard the reports from some of the committees this morning. Would you care to respond to any of their statements?

VADM W.P. Arentzen, MC, USN: I am going to ask the members up here to respond to specific things. I think that first I will ask Admiral Rupnik to comment. I will let him get started and then go down the line with certain things that I want done.

RADM E.J. Rupnik, MC, USN: I look ahead with optimistic skepticism or skeptical optimism with regard to what may be done for us in the future, because we are tied to the line budget. They will help us out to the extent they can, but they can't give us more than they are getting themselves. This is particularly true with regard to personnel. I know that all of you fully appreciate the limitations that are placed on the Bureau of Medicine and Surgery, particularly in the enlisted areas. We just do not have enough enlisted support to fulfill the total requirements that are placed on us. There is going to have to be some decision made at some future date as to where the level of care will be cut off. That remains to be seen.

The notes that I made reflect a feeling of frustration. I think we are falling into the same interbellum trap that we have found ourselves in before each major war. I don't see the emphasis on training to contingency requirements. The emphasis that I have heard here this morning has been on what are we going to do for primary health care. That is important, but remember that we are hired to be available to care for all those wounded patients whenever the bombs are dropped.

What are we doing about training surgeons to take care of multiple wounds and injuries and burns? Where are the remarks made in regard to the orthopedic specialties? These things are of some concern to me. I know that we have placed a lot of emphasis on primary care, but perhaps we are over-emphasizing it.

One of the recommendations I thought I heard here this morning was that we have got to take vertical cuts in areas where there are high numbers of civilian employees. Perhaps that would be in the area of obstetrics. I would remind you that the obstetrician is one of those individuals who during peacetime takes care of our dependents' needs; but in time of war he is a good surgeon who can respond to our contingency needs. I think that is true of a lot of our specialties. When we train we must keep in mind that our ultimate goal is to train for the contingency we may have to respond to.

When we think of the priorities of patient categories, we must remember that care of the dependents of active-duty personnel is probably as important, or maybe even more important, than care of the active-duty man himself. An active-duty individual aboard ship or out in the field is not a very effective fighting man if he is worried about who is taking care of his family back home. So while we may have to curtail some care to some patient beneficiary category, I don't think that we will ever curtail care to the dependent of the active-duty member. That goes along with this family practice concept. The family practice concept should be directed first and foremost to the active-duty patient and his family.

The problem I see is large numbers of retired families signing up for the family practice program. And, of course, as more active-duty individuals go out, more retirees sign up. Pretty soon we would be taking care of all retirees and their families, and there won't be room to take care of the active-duty member and his family. We must not fall into that trap. I know you are all working to avoid that. Commanding officers of various facilities are particularly aware of that problem.

On Tuesday I said that our problems probably began with the abolition of the draft. I think our problems in education and training also began with the publication of the Millis Report. I can't think of any report that has been more damaging to us as an institution than the Millis Report. We are right back where we were four years ago. We are now

talking about an all-purpose type of internship. That is exactly what Dr. Millis tried to steer us away from. I don't know how many of you agree with me, but I think he was wrong. I think we need to go back to the broad-based internship, and begin definitive specialty education after the physician serves a period in an operational tour.

Participant: I attended the first SAC meeting. I started as a clinician representing the operational forces three years ago, and it was three years ago that the need for the increased support of the operational forces was identified. Last year there was great discussion. This year everybody is in the act and we are about to do something about it. Everybody is talking about it.

I agree that we need a rotating internship. We must be aware of all the needs of the Navy. Occupational medicine is one need, flight medicine is another, submarine medicine another, surgery another, psychiatry another. We are all part of the same team, and we all need to be welded together. We need to be one Navy doing one job.

RADM A.C. Wilson, MC, USN: I mourn the passing of the rotating internship along with the five-cent cigar. But that is not the game these days. As most of you know, I am fresh back in the Bureau. A couple of things were immediately apparent to me. The language that is used in Washington now to fight for resources is very different language from what was used just two or three years ago. We are now talking in terms of systems. We are talking in terms of models and studies. Nobody has any credibility anymore unless he has recently seen his analyst, and I don't mean his psychiatrist.

We are forced on a minute-to-minute, day-to-day basis to review in very fundamental terms—that all add up to dollars—how and what we are doing. And in every Navy community sacred cows are being slaughtered every day as people are learning that certain traditional, time honored, and very comfortable ways of doing things have to be abandoned in favor of better management techniques.

So that is the business we are in. To make all of this possible has required considerable reorganization of the Bureau. Our plea to people in the field—or at least my plea as a resource representative for you—is to be as objective as you can. Look at how you are doing and at what you are doing. Sit on the other side of the fence, at least intellectually, and ask yourself, Is this task or procedure necessary? Is this the best way? What would happen if I didn't do it at all? What would happen if I did it differently?

As you all know, we are not exactly wealthy. We are not going to be wealthier to any great degree next year, either. However, a couple of good things are happening. We have great confidence that we will get more money for major equipment in the next couple of years than we have gotten in the past few years.

You have all been asked to submit your investment equipment list, and we have got to have those lists well scrubbed. We cannot afford to have a solitary dollar wasted on any piece of equipment. Personal wishes are fine, but unless they fit into the pattern of utility and productivity to meet the mission of your facility, forget it.

We have some new facilities, and we are getting more of them. I was interested to hear the surgical group talk about overlapping shifts and getting more mileage out of what we have. This is the kind of thing that we all have to do—decide how we can get more mileage out of what we have. I am available on the phone, if you need to talk with me.

RADM R.W. Elliott, Jr., DC, USN: I heard a story the

other day about a father and son who were in church. During the church service the boy was looking around and not paying attention to the preacher. He saw a stained glass window and said, "What is that, Dad?" His father replied, "That is a memorial to those who died in the service." The boy thought for awhile and then he said, "The eight o'clock service or the nine o'clock service?"

Obviously, they weren't communicating too well at the moment. I think Admiral Arentzen has expressed his desire that Navy dentists and physicians communicate better and more frequently. I am in full agreement with that.

In the area of credentialing, as discussed by the Oral Surgeons Committee, I fully concur with the recommendations. I believe that in medical centers and hospitals where credentialing committees are established a dental officer should be included as a full representative, and a full member of the team providing care to patients in the hospital.

Relative to operational assignments, and to assure that general practice residents have the background they need to function in the operational arena, one of my major concerns has been that they be taught what they need to know to function in a triage area. As you all know, when the Navy goes to war we dentists operate in close coordination with the physician and the team that cares for people who are injured in battle. Our job concerns triage. I want our residents to learn about shock, hemorrhage, and other such problems to enable them to fully support you physicians in the performance of your assignments. Admiral Arentzen, we welcome the opportunity to work fully and more closely with our medical colleagues.

RADM M. Conder, NC, USN: Nurse Corps recruiting is very good today. We are having no problems getting high-quality applicants. Our problem is authorized billets. To be certain that we are using our nurses effectively, we are looking very carefully at the number of nurses who will be placed in the practitioner programs. We have recently suspended the Ob/Gyn Nurse Practitioner Program, and we are looking at the other programs to determine how many more nurses, if any, we can put into these groups. I think nurse practitioners have done a fine job. I think the Navy Medical Department uses them well. But I do not believe I can afford many more.

VADM Arentzen: I don't know whether all of you have met the new head of the Medical Service Corps, but he is CAPT William J. Green, Jr., sitting at the end of the table. I asked Bill to look into getting the MSC some audiologists. We would like to hear some of the problems involved in doing that.

CAPT Green: I have been in the job about three weeks, and I can recall at least ten specific requests for more numbers from the MSC, either to do something in the MSC or somewhere else. We have a fixed number, and there must be compensation. This is the iron rule.

We are looking into audiologists, where we have had a problem for the last three years. There is no question of demand and need: the question is, how is that offset with all the other demands and needs? I can't tell you what we are going to do about it yet, but I know there is a combination of needs in occupational safety, in research, and in the clinical areas. Melting them all together is going to be difficult.

I already know a number of you, and I am available to talk with you about your problems. That is the way I am going to learn what my job is and how to do it. I extend an open invitation to everyone: if you have some problems about using MSC officers—not getting them, but using them—I will be happy to talk to you and maybe we can work something out.

RADM J.W. Cox, MC, USN: I think the most important aspect of the training question is to make sure there is no confusion in anyone's mind as to the sets of competing imperatives we face. We all know the concept of the continuum of graduate medical education, and the basis upon which the Millis Commission made that recommendation. The Millis recommendation for disestablishing the internship as a free-standing entity, and the reasons behind that recommendation, I think were sound. But that doesn't mean that the continuum has to run consecutively week after week, month after month, or year after year. It is educationally sound to modify the continuum, to have life's experiences reinforced by following a formal study period with a work period.

This concept is emerging in our vocational schools and a number of our professional schools. I can recall that students in teachers' colleges were always sent into schools to practice, to sharpen their skills. We have a plan so that graduate medical education level one students will have a year of traditional training and will then move into an applicable, operational support mode to sharpen and reinforce their skills, to acquire competence and maturity which will be of benefit when they return to the formal graduate medical education structure.

I can assure you that when we were developing this concept and defending our graduate medical education programs before the AMA reference committees we were asked, are you returning to free-standing internships? And we are on record as saying no. But that doesn't mean that an individual has to plant himself in a hospital for two, three, or four years without interruption in the temporal aspects of training within the hospital itself. He can train just as well—with the type commander force medical officer giving guidance and checking on the quality of his performance—with the operating forces. I think that is educationally sound.

Another thing to remember is that training which is tailored to meet the needs of the Navy will also meet the crying needs of the civilian community for those skills.

VADM Arentzen: I think that most of you know that CDR Walt Godfrey heads the Hospital Corps. We know of your severe problems with the number and type of technicians needed. So let's see if he can give you a few words on that.

CDR Godfrey: The Hospital Corps consists of 24,000 people. We do not expect any dramatic increases and I would hope no dramatic drop in those numbers. I believe our biggest problem is one of maldistribution. This problem has come upon us over a number of years because of changes in distribution of other assets—physicians, nurses, and so forth. We are working to bring this into line. There have been great changes with the physicians' billets shifting, and with bringing bodies into line with workload and mission; we will follow a similar course in the Hospital Corps.

Personnel in Hospital Corps specialties make up approximately 53% of our members. Most of these specialties are centered in the hospital area. Only 12,000 or 13,000 of our billets belong to BUMED and are under the control of the Surgeon General. The others belong to other major claimants and are theirs to do with as they please. We have to talk, cajole, do anything we can to get them to change to meet our system. These two areas trade back and forth because of sea duty, Fleet Marine Force duty, etc. With the expansion in the specialty areas, it is quite difficult to fill requirements. Additionally, we require many, many general duty corpsmen. We require corpsmen for the Fleet Marine Force ships, squadrons, etc.

Most of the youngsters that we bring in leave us in the first four years. We hope to hold about 25%. In August 1976 we had a 14% reenlistment rate in first-term hospital corpsmen. This is not unique to the enlisted members of the Medical Department. This is happening throughout the Navy. We don't know quite what it means yet, but it is also happening in the Army and Air Force. The GI Bill has gone, and the economy is perking up. We are going to have more and more turnover. There is a task force now at work to see what can be done about this problem.

If I can leave you with any one single thought, it is the utilization of the corpsmen that you have. You must recognize that there are not any additional corpsmen coming down the line, so you must make do with the people you have and not start new functions without stopping old functions.

When I was in the field myself, many times I helped start a program with the idea in mind that once it got going BUMED would give us the assets we needed. There are people in this room that I have helped do that. We can't do it anymore. If you are going to start a new program you have got to have the assets to do it. If we increase specialties in neurology for example, we must necessarily take them from somebody else. There is nothing new coming down the line.

One other thing, and this is just philosophy: your hospital corpsmen, particularly your young ones, are not professionals in this field. They are in the Navy for whatever reasons they have. They are in their specialty because it "looked good" to them. In the operating room, for example, there are two professionals: the doctor and the nurse. The corpsman is there because that specialty "looked good" to him. Three out of four of them are going to leave the Navy and medicine. Recognize this fact when you deal with them. We must try to reenlist these people, but the chances are very slim.

VADM Arentzen: We will open now to any questions you have that have not been covered.

Q: *I want to disagree a little with what Admiral Rupnik said about training for contingency. I think that a well-trained physician knows how to care for patients—whether the problem is fractures, burns, or whatever. If we have specific guidance from the line as to what contingency they are planning to undertake, we can train for that. I think that if a person is well trained and well qualified, he can handle the contingencies.*

RADM Rupnik: My only concern is that I recognize a de-emphasis in the surgical specialties. And that is all I am saying. I think that if we have to go to war it will be the surgeons and orthopedists who will be called on to take care of the injured.

We are going to have to have a lot of people trained to take care of burned patients. We are going to have to have a lot of people trained in plastic surgery. We are probably going to have to have a lot of people trained in tropical medicine. These are my concerns now.

Q: *I have several questions for CDR Godfrey. You mentioned forgetting any idea of implementing new programs that require new people trained in new technical skills. What about those of us who have valid clinical programs where the people trained in the technical skills needed to support them don't even exist? An excellent example of this is the newly developing field of noninvasive diagnostic techniques. And finally, now that we have stopped training EKG technicians, what are we going to do?*

CDR Godfrey: Relative to new programs, I believe what I said is that if we start a new function, we must cease other functions. We simply cannot stretch. We don't have all those people to put in new functions if we are going to continue the old ones. It is simply a matter of time, dollars, and people. We certainly need new programs and we need to go into new areas; but when we do so we have to find other programs we can stop. We must set priorities. It is just that simple.

Now about EKG technicians. The fact is that an awful lot of our corpsmen in many, many areas are required to know how to use an EKG. If they can be trained on the spot, we would hope that there would always be someone available that could use the equipment. In the emergency room, I believe all corpsmen assigned must know how to use EKG equipment. So should corpsmen in the Internal Medicine Department. I think all corpsmen should know how to use it, and be trained in how to use it. That was the prime reason for taking away the specialty. There was no need to limit training to any one group of individuals; rather we decided to spread the training out and let everyone learn.

RADM Cox: I think perhaps I can elaborate. It goes beyond electrocardiographic technicians. It goes into ultrasound and other so-called specialties that emerge primarily around a technique; this is what causes multiple traditional disciplines. There is more and more recognition that fragmentation has resulted where disciplines are constructed on the basis of a given technique rather than on a system of scientific and technical fact. That is not a viable operation. The electrocardiographic technician was a dead-end procedure in the Navy and it is a dead-end procedure in the civilian community.

They have tried to get the American College of Cardiology to recognize them as technologists, and they fill their proposals with a bunch of irrelevant material to study to gain technologist status and have accreditation procedures. But it is a technique, not a discipline.

Cardiopulmonary training on a tri-service basis has gone on for a good many years. We have the proper training program for a broad-based cardiopulmonary technician who, in the future, can narrow his specialty interest as the need demands. We are training to our own authorized requirements. The schools are not saturated and if it were necessary to expand that training because of a validated future manpower requirement of any service, we could do so. We are not training to capacity in the CP schools.

Participant: I would like to thank the Director of Clinical Services Committee for the inclusion of the three-month operational tour in their deliberations. I believe I speak for junior medical officers in underscoring the importance of this. Support of the three-month concept will be interpreted by this group as evidence that the SAC participants have their needs in mind. I think that is a very important consideration.

Participant: I have developed an increasing awareness of a critical weakness in the Medical Department's position. One of the main causes of our difficulties is the problem of obtaining the necessary resources to continue providing what we consider is proper medical support in the Navy. I believe that weakness to be our failure to develop and articulate a proper philosophy of the role of military medical support in the Navy and how that role may be properly implemented.

In the education of a naval officer, including medical



Clockwise from bottom left: CAPT Bishop; CAPT Dully; CDR Godfrey with RADM Kaufman (standing); CAPT Bailey; CAPT Green



officers, I am unaware of any course in instruction which articulates the proper role of military medicine. I believe that proper medical support for the military may be defined as that medical support which is essential to victory. The support may be subdivided and categorized as a direct management of battle casualties in relation to health preservation, which is essential to the continuing efficient operation of the Navy.

We must also consider the effect that medical support—particularly support of the families of active-duty military personnel—has on morale. We must realize the political importance of medical support to any military service. I need only cite the excellent medical support given to the military services in Vietnam; had it not been for the medical support, there is no doubt in my mind that the casualties-to-killed ratio would have been considerably different. The effect of this on the morale of the people of the United States and the military services, and the political implications of these statistics, would have been considerable—and would have altered the course of the war.

There is a need to develop a proper philosophy on the role of military medical support, and to articulate that role in the form of position papers, books, and instructional courses. I therefore wish to make a specific proposal. After the development and articulation of the proper role of military medical support, however that may be arrived at, I propose that a new course be developed, to be part of the curriculum of all naval officers, including medical officers entering the Navy. These courses should be incorporated into the Naval Academy and Naval ROTC programs. These courses should outline the proper philosophy of the role of military medical support, and should disseminate to people who are about to become naval officers information about the organization of the Medical Department, medical care, and a general idea of how medical care is provided in the civilian community. Also included should be a description of what we consider to be proper medical support for the military, and how its organization might differ from the general provision of medical care.

VADM Arentzen: I don't think we could close the meeting without some words from our Deputy Surgeon General, RADM Paul Kaufman.

RADM Kaufman: It is refreshing for me to hear what I have heard in this meeting and that is the approach back to Navy. If you listened to the Vice Chief of Naval Operations, he emphasized not once but several times a statement that some of us may take issue with. He said we are first naval officers. I think it didn't take him more than two sentences into his talk to get that out.

As a follow-on to that, some of you have heard about the Naval Health Care Review Committee. I had a very sensitive role to play as chairman of that Committee. It was supposed to reflect the opinions of the line. The report is very comprehensive, and includes four volumes. The last one is classified, but basically it says, hey, doc, how about getting into the Navy, finding out what it is like in the field? It emphasizes the point that we should first see what is out in the blue-water Navy and after that put it all together as a doctor, and that includes the doctor of dentistry as well as the doctor of medicine. I heard here that you have been ahead of us and have felt this change. So I applaud you for your efforts and certainly I will also support their continuation. I think Dr. Cox is to be congratulated, and I want to congratulate each and every one of you.

VADM Arentzen: When I first came, Mr. McCullen, who is assistant secretary of the Navy for manpower, said to me,

"See if you can get the Medical Department back into the Navy. See if you can't get the line to realize that you are part of the team." The same thing was told to me by VADM Watkins, Chief of the Bureau of Naval Personnel. This we are going to try hard to do.

I would like to remind you that we have one Medical Department dedicated to total patient care. Now, I don't consider that we have a separate branch of operational medicine. Everything we do, everything our hospitals do, is in support of the fleet, in my opinion. Just because some of you aren't sitting on a ship doesn't mean that you are not supporting the fleet.

During my four years I am going to try to get this idea across. We will train, we will try to make it more exciting for those who have always been in a hospital environment. I don't expect those who are out in operational medicine to keep complaining that they are not getting support or that they are second class. If they think they are second class, they have got to make themselves first class by becoming more professionally competent. They must keep up with things.

As you probably know, one of the first things I did was to start out with our interns, at the GME-1 level. They must have some operational training before they finish. I am certain that our operational officers are going to rotate back into our hospitals, not just for residency but for tours of duty. They are to maintain their professional competency in medicine and they will then have a chance for a permanent change of station and a chance to command our hospitals.

I emphasize that what we have is *military* medicine: it is not operational medicine and hospital medicine; it is not operational medicine *versus* hospital medicine; it is not the haves and the have nots.

I would like to remind you that I am doing the same thing here that I did at my commands. I have an open door for any of you. My telephone is available for any of you when you have a problem. I would like you to go back to your commands, talk up the good things you have heard. Try to make the young doctor realize that military medicine can be very exciting. We do have lots of challenges from the line side, from the Office of Management and Budget, and so forth. They are asking us to do more than our best with less and less.

I appreciate all the advice you have given us here and all the work you have done. I assure you that the gentlemen and the lady sitting up here will do their best to support every one of you out in the field where the action and the fun is.

RADM Cox: I want to express, on behalf of the entire assembly, our most profound thanks to the real workhorses who organized this conference: CAPT Joe Cassells, CDR Brian McAlary, and their staffs.

I will leave you with one thought. We have an action-oriented and problem-solving mental set. In the words of Professor Akoff from the Wharton School of Business and Finance in Philadelphia, there is no such thing as a problem. There is a system of problems which he calls a mess, and what we call a problem is a mini-mess. Therefore, what you have done during this past week is precisely what I requested that you do in my welcoming remarks. You have exchanged information, not opinions. The presentations today identify the interrelationship of the mess. Having recognized the impact of each item on the other, we can now get about the job of a systems approach to a satisfactory accommodation to the mess, in the words of Akoff.

My congratulations to you and my most humble thanks.

U.S. Navy Medicine

BUMED SITREP

DOD HEALTH COUNCIL . . . A Department of Defense Health Council has been established, chaired by the Assistant Secretary of Defense (Health Affairs), and including as members the Surgeons General of the three military departments and representatives of the Joint Chiefs of Staff and the Uniformed Services University of the Health Sciences.

The Council will provide a central entity to coordinate the planning, programming and evaluation of DOD health care operations, including CHAMPUS, within the continental U.S. Under the terms of its charter, the Council will evaluate resource requirements, oversee operations of regional health programs, and recommend health service policies to the Secretary of Defense. The Council will also implement a CHAMPUS consumer appeal system.

CHARGES INCREASED . . . Charges have been increased for medical care provided in overseas Navy medical facilities to civilian employees of the United States and their dependents. Foreign nationals (and their dependents) employed by the U.S. will now be charged \$168.00 per day for inpatient care, and \$20.00 for each outpatient treatment, examination, or consultation. U.S. citizens employed by the U.S. overseas will also be charged \$20.00 for each outpatient visit. Local union contracts or agreements which include old rates will be honored until such contracts expire. (These changes were published in BUMED Notice 6320 of 1 Jan 1977.)

PHYSICIAN STAFFING . . . A method for developing staffing targets (STAFF-TAR) for Navy physicians by specialty has been successfully tested on the specialty of orthopedics, including physical therapy. The test was carried out in conjunction with the Shore Requirements, Standards, and Manpower Planning System (SHORSTAMPS). The new method—which emphasizes using Navy board-certified specialists as consultants—will be used over the next 2½ years to develop staffing criteria for all basic medical and surgical specialties.

It is expected that staffing standards will be developed for three to five specialties every nine months. Standards for general surgery, anesthesiology,

and urology are now being developed. Other areas to be examined are internal medicine, family practice, pediatrics, psychiatry, pathology, radiology, ophthalmology, otorhinolaryngology, obstetrics and gynecology, medical administration, nursing, and military medical specialties.

A final report of the orthopedic/physical therapy results will be published later this year.

AEROMEDICAL SAFETY . . . Operational and administrative problems encountered by AMSO teams, and approaches to accident prevention and investigation were discussed at the first Navywide meeting of Aeromedical Safety Operations (AMSO) officers, held 30 November to 1 December in Norfolk, Va. Attendees considered proposed future staffing of AMSO teams; how to improve communications between AMSO teams, BUMED and the Naval Safety Center; medical support to Navy Search And Rescue (SAR) efforts; and how to upgrade training in the use of survival and life support equipment. A draft of a proposed BUMED instruction to establish the Navy AMSO Program was reviewed at the meeting.

RESIDENTS PICKED . . . Of 27 flight surgeons who applied for Navy residency training for FY77, 22 (81.5%) were chosen. The flight surgeon com-

munity did well in all specialties, reflecting a positive response to the Surgeon General's direction that applications from operationally assigned medical officers be considered first.

Here is a breakdown of flight surgeon acceptance by specialty:

Specialty	Applied	Approved
Aerospace medicine	7	6
Family practice	2	2
Internal medicine	1	1
Obstetrics/ Gynecology	2	2
Ophthalmology	3	3
Orthopedics	1	1
Otolaryngology	1	0
Pediatrics	2	1
Surgery	4	2
Psychiatry	1	1
Radiology	2	2
Physical medicine and rehabilitation	1	1
Total	27	22

FLEET POOL EXTENDED . . . The Chief of Naval Operations has approved extending the single manager system for medical officers of the fleet (fleet pool) until 30 Sept 1977. The approval stipulated that no more than two medical officers will divide the assignment for any forward deployment. For more information, contact BUMED Codes 5 and 31.



LIAISON . . . Staff members of Naval Regional Medical Center Long Beach, Calif., held their quarterly staff medical conference in the USS *Constellation* (CV-64) last November to get a better understanding of living and working conditions aboard ship. It was all part of the fleet medical/dental liaison program designed to ensure quality patient care in support of the fleet.

Clinical Notes

Medical Support in Antarctica During Operation Deep Freeze

LCDR David B. Moyer, MC, USNR

When the Antarctic Development Squadron Six (VXE-6) undertook Operation Deep Freeze 1976, an important objective was the recovery of two aircraft damaged on takeoff during the previous year's operation. In the 1975 effort an international group from the U.S., France, Australia, and the Soviet Union had established a field camp in Antarctica to investigate the thickest ice known to exist: Dome "Charlie," one of three ice domes on the high plateau of East Antarctica. While flying supplies to the International Antarctic Glaciologic Project at its Dome Charlie camp, two large, ski-equipped LC-130 aircraft belonging to VXE-6 crashed 600 miles west of McMurdo Station.

The technical and logistical problems of recovering these aircraft were obvious; less obvious but also of paramount importance were medical problems encountered in the exceedingly hostile Antarctic environment, with its extremely low ambient temperatures even in midsummer and its high altitude of 10,560 feet. Because of unusually low barometric pressure and consequent partial pressure of oxygen, there is as little oxygen at 10,560 feet in Antarctica as at sites 11,800 feet above sea level in other parts of the world.

On 31 Oct 1975, VXE-6 landed the first aircraft of Operation Deep

Freeze 1976 at Dome Charlie, bringing 15 people to set up camp. For the previous three days, the group had stayed at South Pole Station (elevation 9,100 feet) to adapt physiologically, or acclimatize, to the high altitude.

The workload was heavy during the first week. Temperatures ranged from a high of -35°F. to a low of -69°F. Meals consisted of heated C rations, and appetites soon declined as lack of variety made the food increasingly unpalatable. On 4 Nov 1975, while the group worked, another LC-130 was damaged on takeoff; three planes now awaited repair and salvage on the ice cap.

In this first group of workers, four men suffered superficial frostbite on their hands, face or ears, but recovered fully without treatment or sequelae. No altitude-related medical problems were seen by the squadron flight surgeon or the

corpsman who accompanied the men.

The camp was evacuated on 17 Nov 1975, then reoccupied from 7 Dec 1975 to 19 Jan 1976 by 30 to 55 men assigned to the second part of the operation, Dome Charlie IV. These men concentrated on repairing the downed planes and eventually flew out two of the damaged aircraft. Living conditions by now were much improved—the group had a galley, hot showers and other amenities, and temperatures were milder, from -10°F. to -35°F., in the Antarctic midsummer. Clear weather with relatively little wind was the rule.

There were no injuries or other major medical problems, and only one case of frostbite: a New Zealand survival expert sustained superficial frostbite with blistering on his ears after skiing cross country. All newly arriving personnel were required to acclimatize at Amundsen-Scott

TABLE I. Medical Problems During Operation Deep Freeze 1976
(N = 48)

Symptoms	None	Mild	Moderate	Severe
Shortness of breath while exercising	12%	72%	16%	
Lightheadedness or dizziness	56%	28%	16%	
Headache	44%	52%	4%	
Numbness or tingling of fingers or other body areas	68%	20%	12%	
Difficulty sleeping	40%	44%	12%	4%
General fatigue	56%	44%		
Loss of appetite	80%	12%	8%	
Nausea	90%	10%		
Vomiting	98%	2%		
More urination than usual		8%	8%	
Less urination than usual		8%	4%	

LCDR Moyer is a flight surgeon assigned to Antarctic Development Squadron Six, FPO San Francisco 96601.



During Operation Deep Freeze, LC-130 Hercules aircraft like this brought supplies and equipment to Dome Charlie.



This snow house was built during Operation Deep Freeze survival training.



A Navy man melts snow on a Coleman stove to get fresh water during Operation Deep Freeze.

South Pole Station for 72 hours before proceeding to Dome Charlie; about half of these men developed mild symptoms of acute mountain sickness, such as headache, fatigue, and sleep disturbances, during their first days at South Pole Station.

Everyone who arrived at Dome Charlie after Christmas Day filled out a questionnaire designed to identify the incidence of medical symptoms (Table I). No control group went directly from sea level at McMurdo Station to Dome Charlie, and no unacclimatized control group is planned for the future; we would expect to see more medical problems in a group that had not acclimatized at South Pole Station.

We made no attempt to compare the symptoms listed in Table I with the symptoms of acute mountain

sickness or hypoxia secondary to low partial pressure at this altitude. For instance, severe sleep disturbances could have been the result of the stress of the new environment, uncomfortable quarters, continuous daylight, or other factors rather than the result of acute mountain sickness. To treat sleep disturbances, 10 mg of diazepam was distributed, to be taken orally at bedtime. Great care was taken to alert the men to the more serious manifestations of mountain sickness, especially high altitude pulmonary edema, but there were no cases of lung congestion.

In summary, medical problems encountered at Dome Charlie were minor, and acute mountain sickness was ameliorated by an acclimatization period at South Pole Station.

To get around in Antarctica you sometimes need a rope ladder.



Independent Duty

The Influence of High-Risk Groups on the Incidence of Gonorrhea

CDR Lee J. Melton III, MC, USN

As an independent duty corpsman, you undoubtedly have a general idea of how frequently you care for various specific medical complaints. But have you ever thought about the other side of the issue: Who are the *patients* you see most often? Do you see one patient over and over for the same condition? Does another patient seem to fall victim to an endless variety of disorders?

It is easy to observe that no disease affects everyone to the same degree. Even with the common cold you can find some people who seem to be practically immune, while others suffer from the illness repeatedly. What may be less obvious is that whole groups of people may contract a given disease far more often than do other groups.

This paper will deal with the idea of such "high-risk" subpopulations in the Navy and Marine Corps. I will illustrate the principle with one disease, gonorrhea, and point out how the concept of a high-risk population can be useful in preventing other illnesses as well as in caring for patients.

There may be many reasons for one particular subgroup to have a higher disease rate than the rest of a population. Individual biological variation, for example, might explain why some recruits develop clinical meningococcal meningitis while thousands of their mates are only asymptotically infected as nasopharyngeal carriers. Still other diseases may depend on the conditions under which a group of people lives or works. It is not unlikely that Marines on maneuvers in the Arctic will have a greater incidence of frostbite than other Marines, or that the engine-room crew will suffer more than other shipboard personnel from the adverse effects of heat.

When a particular part of a population suffers disproportionately from a certain disease, we usually find that the members of the subgroup have common characteristics which put them at risk. Some of these characteristics have been identified. Smokers, for example,

have more lung cancer than do nonsmokers, and chronic alcohol abusers suffer an unusually high incidence of cirrhosis of the liver. Unfortunately, the important factors are not always clear. Sometimes, as in the case of ischemic heart disease, the characteristics can only be summarized vaguely as "lifestyle."

Other groups have been identified that are predisposed to not one, but a whole spectrum of diseases. One such group is often referred to as "risk takers." Most of us recognize that taking chances is a normal part of adolescence, the time when one explores his own limits and the limits of his environment. However, when carried to extremes or maintained into later life, risk-taking behavior can have many adverse effects. It has been found, for example, that risk takers are disproportionately involved in traffic accidents (1), smoking (2), drug abuse (3), and cases of venereal disease (4). While the motivation for these misadventures is not completely understood, peer pressure and alcohol use seem to be prominent in provoking such behavior.

Risk takers are an especially important group among Navy and Marine Corps personnel (5,6,7). As might be expected, venereal disease is one of their characteristic problems. Not only does the sexual behavior of risk takers increase their chances of acquiring venereal disease, but they probably also ignore the effective protective measures that are available. One result: the sexually transmitted disease most commonly reported among active-duty members is gonorrhea (8).

Characteristics of the group at high risk for gonorrhea have recently been illuminated in two studies of the crews of Navy ships deployed to the Western Pacific. The first study was carried out on an aircraft carrier by members of the Navy Medical Department and the U.S. Public Health Service. Preliminary results from this study were presented at an American Public Health Association meeting held in October 1975 (9); some of the data are given in Table I.

While not shown in Table I, the relative risk of acquiring gonorrhea was greater for blacks than for whites. On the other hand, because of their greater numbers in the crew, whites accounted for almost 70% of the cases. In Table I, only the results for white crewmembers are shown, because their risk characteristics were more clearly defined.

The data in Table I identify the high-risk group responsible for most of the gonorrhea cases as young, unmarried, white males with less than a high-school education. Members of the high-risk group were in rates E-1 to E-4, had served less than one year in the Navy, and were on their first cruise. Of particular interest with regard to risk taking was the observation that nearly 60% of the crewmembers in this study had never used a prophylactic while in the Navy; another 34% "seldom" or only "sometimes" used one.

The second study was conducted by personnel from the Naval Health Research Center, San Diego, Calif., aboard a Navy destroyer also deployed to the Western

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TABLE I. Predictors of Gonorrhea Among White Crewmembers (Navy/Public Health Service study)

Characteristic	Predictors of Risk*
Age	20 years or less > more than 20 years
Education	Less than 12 years > 12 years > more than 12 years
Marital status	Not married > married
Pay grade	Enlisted > officer E-1 to E-4 > E-5 to E-9
Years of service	Less than 1 year > 1 year > 2 to 9 years > 10 years
Number of cruises	First cruise > second cruise > third (or more) cruise

*Crewmembers with the first predictor on each line had a greater (>) incidence of gonorrhea than crewmembers with the second predictor.

Pacific (10). As shown in Table II, the second study confirmed the importance of age, race, education, marital status, pay grade, and years of service as predictors of gonorrhea. This study also identified additional relevant factors: poor performance marks, lower General Classification Test scores, and a record of disciplinary actions during the cruise.

Of course, not everyone with these characteristics contracts gonorrhea. Nor is gonorrhea seen exclusively in this high-risk group. The importance of the two studies is this: *These characteristics, when considered together, identify a part of our Navy population that has an especially high risk of acquiring a venereal disease.*

This information is especially important to independent duty corpsmen. You should suspect sexually transmitted disease when you diagnose conditions in members of the high-risk population. The data also suggest that you should aggressively work up vague genitourinary complaints when they occur in high-risk patients.

The indirect importance of this knowledge may be even greater. In daily living, we evaluate most things

on the basis of their familiar attributes. A new album by a favorite musical group, for example, is eagerly awaited solely on the strength of the group's familiar characteristics. The same phenomenon works in medicine: your expectations about the course of an illness or the outcome of therapy are often derived from the clinical picture you form from your past observations. Your talent for predicting the impact of a patient's disease characteristics can be profitably applied to anticipating the health effects of his *personal* characteristics.

Thus, if you know that your patient is a young, unmarried, white male who did not graduate from high school and who has been in the service less than one year, you also know he is peculiarly susceptible to certain disorders. If he has a recent history of disciplinary trouble or is recovering from a minor motorcycle accident, you might with some confidence think of him as belonging to the subgroup of adolescent risk takers. As I pointed out earlier, members of this group are heavily involved in medical and disciplinary problems. The identification of one condition, such as venereal disease, may then permit you to predict that another behavior, such as drug abuse, is likely to occur, and to orient your disease prevention efforts accordingly. This idea can be stated in more human terms: an understanding of such relationships can help you to better interpret your patient's needs and concerns.

Gonorrhea is not the only disease that selectively affects one or another group—most diseases do! Try to evaluate your patients on the basis of the groups they belong to, and to identify characteristics that place group members at an increased risk of illness. In this way, you may be able to increase your efficiency and improve your effectiveness in diagnosing and treating the problems of the people who come to you for help.

REFERENCES

- Schuman SH, et al: Young male drivers. JAMA 200:1026-1030, 1967.
- Tamerin JS: Recent increase in adolescent cigarette smoking. Arch Gen Psychiatry 28:116-119, 1973.
- Crumpton E, Brill NQ: Personality factors associated with frequency of marijuana use. California Medicine 115:11-15, 1971.
- Stark-Romanus V: Social and behavioral aspects of venereal disease. Br J Vener Dis 49:163-166, 1973.
- Gunderson EKE, et al: The epidemiology of illness in naval environments. Milit Med 135:453-458, 1970.
- Biersner RJ, Cameron BJ: Betting reference and personality characteristics of Navy divers. Aerospace Medicine 41:1289-1291, 1970.
- Levine JB, et al: Attitudes and accidents aboard an aircraft carrier. Aviat Space Environ Med 47(1):82-85, 1976.
- Melton LJ: Comparative incidences of gonorrhea and nongonococcal urethritis in the United States Navy. Am J Epidemiol 104:535-542, 1976.
- Jones OG, et al: "Personal characteristics associated with the prospective risk of acquiring gonorrhea and nongonococcal urethritis." Read before the American Public Health Association annual meeting, Chicago, Ill., October 1975.
- Levine JB, et al: Social aspects of venereal disease aboard a U.S. Navy destroyer. J Am Vener Dis Assoc 3(1):35-39, 1976.

TABLE II. Predictors of Gonorrhea (Naval Health Research Center study)

Characteristic	Predictors of Risk*
Age	Less than 20 years > 20 years or more
Race	Black > white
Education	Less than 12 years > 12 years or more
Marital status	Single > married
Pay grade	E-1 to E-3 > E-4 to E-9
Years of service	Less than 1 year > 1 year or more
Performance marks	3.4 or less > 3.6 to 3.8 > 4.0
General Classification Test score	55 or less > 56 or more
Disciplinary record	One or more disciplinary actions > no disciplinary actions

*Crewmembers with the first predictor on each line had a greater (>) incidence of gonorrhea than crewmembers with the second predictor.

Notes & Announcements

FLIGHT SURGEON BILLETS OPEN

With fewer flight surgeons on active duty involving flying, many interesting and challenging billets have become available. Flight surgeons approaching a release from active duty or rotation date may ask for a change of duty if they agree to remain at least one year at a new duty station within the continental U.S., or for the required tour length overseas.

Reserve flight surgeons who have received release from active duty orders may be eligible for transfer to a vacant billet of their choice if they agree to extend their period of active duty.

Flight surgeon billets are now open or will soon be available at:

California: COMNAVSURFPAC, and the Aeromedical Safety Operations Office of Environmental and Preventive Medicine Unit #5, San Diego; HS-10, NAS North Island; Branch Clinic, El Centro; VF-126 and CVW-2, Miramar; Branch Clinic and Third Marine Aircraft Wing, MCAS El Toro; Naval Hospital, VA-127, and CVW-11, Lemoore; VP-19, VP-40, and VP-46, NAS Moffett Field.

District of Columbia: Branch Clinic, NAF Andrews Air Force Base; Armed Forces Institute of Pathology.

England: U.S. Naval Activities, United Kingdom, London, England.

Florida: Naval Aerospace Medical Institute, Pensacola; Naval Regional Medical Center and HS-15, NAS Jacksonville; HT-18, NAS Whiting Field; CVW-1, Cecil Field.

Guam: VQ-1, Agana.

Hawaii: Naval Regional Medical Clinic, Pearl Harbor; VP-1, NAS Barbers Point.

Illinois: NRMIC Great Lakes.

Japan: Branch Clinic, MCAS Iwakuni.

Louisiana: Naval Aerospace Medical Research Laboratory Detachment, Michoud.

Maine: Branch Clinic and VP-10, NAS Brunswick.

Maryland: VX-1, Patuxent River.

Morocco: Branch Hospital, U.S. Naval Training Command, Kenitra.

North Carolina: MAG-26 and MAG-29, New River, Jacksonville; Second Marine Aircraft Wing and MAG-32, Cherry Point.

Okinawa: Fleet Activities, Kadena; First Marine Aircraft Wing.

Pennsylvania: Naval Air Development Center, Warminster.

South Carolina: Branch Clinic, MCAS Beaufort.

Texas: Training Wing 3, Chase Field; Training Wing 4, Corpus Christi; Branch Clinic, NAS Kingsville.

Virginia: Naval Hospital, Quantico; Branch Clinic, NAS Oceana; Naval Safety Center, Environmental and Preventive Medicine Unit #2 Aeromedical Safety

Operations Office, Branch Clinic, and VRF-31, NAS Norfolk.

For details about any billet, contact CAPT W.W. Simmons, MC, USN, Bureau of Medicine and Surgery (Code 511), Washington, D.C. 20372. Phone (Area code 202) 254-4361 or Autovon 294-4361.

FINANCIAL AND SUPPLY MANAGEMENT TRAINING ANNOUNCED

The Bureau of Medicine and Surgery has established a new training program to prepare qualified Medical Service Corps officers for entry level positions in Medical Department financial and supply management. The 16-week curriculum of lectures and workshops will be offered at the Naval School of Health Care Administration, Bethesda, Md.

The first class, to convene 31 May 1977, will include 15 officers now stationed in the Washington, D.C., area. Resources are limited for transferring students to the training site during this fiscal year.

A BUMED notice announcing eligibility requirements for future classes and application procedures will be issued this spring. Students will be selected for the training by the Medical Service Corps Training Advisory Board.

DENTAL CONTINUING EDUCATION COURSES SET FOR APRIL

The following dental continuing education courses will be offered in April 1977:

National Naval Dental Center, Bethesda, Md.

Oral diagnosis and dental radiology	18-20 April 1977
Periodontics	25-27 April 1977

Eleventh Naval District, San Diego, Calif.

Complete dentures	18-20 April 1977
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U.S. Army Institute of Dental Research, Walter Reed Army Medical Center, Washington, D.C.

Oral diagnosis and therapeutics	18-21 April 1977
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Armed Forces Institute of Pathology, Walter Reed Army Medical Center, Washington, D.C.

Advanced forensic pathology	18-22 April 1977
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Requests for courses administered by the Commandant, Eleventh Naval District, should be submitted to: Commandant, Eleventh Naval District (Code 37), San Diego, Calif. Applications for other dental continuing education courses should be submitted to: Command-

ing Officer, Naval Health Sciences Education and Training Command (Code 5), National Naval Medical Center, Bethesda, Md. 20014. Applications should arrive six weeks before the course begins.

NEW RULES TO PURCHASE FIREARMS

The Bureau of Alcohol, Tobacco and Firearms, Department of the Treasury, has ruled that members of the Armed Forces who commute to their duty stations across state lines may purchase a firearm in the state in which they are on active duty as well as in their state of residency. Previously, the active-duty station was considered as the only state in which a military member could legally purchase firearms.

When military bases are located near borders with other states—such as in the Washington, D.C., area—military personnel who purchase firearms may now transport these arms between the state where they work and the state where they live.

For the purposes of federal firearms laws (U.S. Code, Title 18, Chapter 44), a member of the Armed Forces is considered a resident of the state in which his or her permanent duty station is located. If a member of the Armed Forces commutes daily from his residence in one state to his duty station in another state, he would be considered a resident of both states under the new ruling, and can purchase firearms in either state.

NEW CLINIC OPENS AT NAS MEMPHIS

A new Naval Medical and Dental Clinic was dedicated 6 Dec 1976 at Naval Air Station, Memphis, Tenn., with Surgeon General VADM Willard P. Arentzen (MC) officiating. Included in the \$3.5 million structure are a pharmacy, laboratory, blood donor center, X-ray and physical therapy facilities, administrative offices, environmental and occupational health services, examining rooms for military sick call and outpatient treatment, 29 dental operatories, four oral hygiene treatment rooms, and a dental prosthetic laboratory. The building covers 57,000 square feet: 34,100 square feet for medical areas and 22,900 square feet for dental spaces. Construction began in July 1975.



New facility for NAS Memphis

IMPORTANT READING MATERIAL

Enlisted members eligible for retirement or transfer to the Fleet Reserve should read the following instructions before making a final decision: BUPERS Instruction 1750.1F, with change 1, Subj: *Survivor Benefit Plan*; and BUPERS Instruction 7220.2F with change 1, Subj: *Retired pay computation*.

Recent changes to these instructions may influence your planning. Don't make a decision that could penalize you for life. Check with your personnel office: they have the latest instructions and can answer any questions.

AWARDS AND HONORS

Legion of Merit

RADM W.H. Hagerman, Jr., DC, USN (Retired)
RADM G.D. Selfridge, DC, USN (Retired)

Meritorious Service Medal

CAPT G.B. Crossmire, DC, USN
CAPT H.D. Tow, Jr., DC, USN

Navy Commendation Medal

CAPT J.H. Charles, Jr., DC, USN
CAPT J.D. Enoch, DC, USN
CAPT E.J. Heinkel, Jr., DC, USN
CAPT J.B. Holmes, DC, USN
CAPT H.J. Keene, DC, USN
CAPT D.E. Parry, DC, USN (Retired)

AMERICAN BOARD CERTIFICATIONS

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